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Corporate governance, conservatism and firm performance: Evidence from China

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CORPORATE GOVERNANCE, CONSERVATISM AND FIRM PERFORMANCE: EVIDENCE FROM CHINA

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Abstract

This thesis examines the effect of the board of directors and supervisory board on conservatism and firm performance, respectively, and the benefits of conservatism on performance. In addition, this thesis investigates whether the effectiveness of firms' governance on conservatism and firm performance is influenced by ownership concentration and state ownership. The extant literature has shown that conservatism reduced agency conflict and was beneficial for corporate governance in developed countries; however, little evidence has been provided for emerging countries such as China.

Sample companies are selected from the Shanghai and Shenzhen stock exchanges for the period from 2007 to 2010. Archival data from companies' annual reports are used and the information relating to conservatism is collected from Datastream. Panel data methodology is employed to test the developed hypotheses developed.

Two popular methods are used to measure conservatism: asymmetric timeliness developed by Basu (1997) and accrual-based method produced by Givoly and Hayn (2000). Two accounting-based performance measures (return on equity and net profit margin), and a market-based indicator (market to book ratio) are used in this study to measure firm performance. For corporate governance variables, five characteristics of the board of directors and four characteristics of the supervisory board are examined. They are board independence, board size, board meetings, CEO duality, top management turnover, supervisory board independence, supervisory board size, supervisory board meetings and supervisory board qualification. Ownership structure is identified by ownership concentration and state ownership. Ownership concentration is measured by the largest shareholdings and state ownership is measured as the number of shares controlled by the state divided by the total number of shares.

In terms of the effect of corporate governance on conservatism, the initial results show that as predicted, higher proportion of independent directors, top management turnover, smaller supervisory boards and more supervisors with professional knowledge or work experience

lead to more conservatism. Except for supervisory board independence and supervisory board meetings, the predicted effects of the other characteristics of the board of directors and supervisory board on firm performance are supported. In addition, firms that employ more conservatism are shown to have better firm performance. The results on the moderating effect indicate that state ownership does influence the effectiveness of corporate governance on conservatism and firm performance.

In addition to the linear relationship between corporate governance, conservatism and firm performance, this thesis finds that some corporate governance mechanisms have a nonlinear U-shaped effect on conservatism or firm performance. Board size is found to have a U-shaped effect on conservatism and supervisory board independence is shown to have a U-shaped effect on firm performance. The frequency of supervisory board meetings has a U-shaped effect on firm performance measured by profit margin while it has an inverted U-shaped effect when market to book ratio is used to measure performance. For the moderating effect of ownership structure, this thesis finds that ownership concentration has an inverted U-shaped moderating effect on the effectiveness of firms' governance on firm performance. State ownership has an inverted U-shaped influence on the relationship between firms' governance and conservatism while it has a U-shaped influence on the effectiveness of firms' governance on firm performance.

The findings of this thesis contribute to the corporate governance and conservatism literature in the context of emerging economies. This study also provides some meaningful implications for policy makers, accounting practice, researchers and users of financial statements in China.

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Chapter One: Introduction

1.1 Introduction

Accounting conservatism is a fundamental feature of quality financial reporting as it improves the reliability of financial statements and decreases information asymmetry (Mohammed, Ahmed & Ji, 2010). Conservatism is defined traditionally by Bliss (1924) (cited in Watts, 2003) as "anticipate no profit but anticipate all losses". This is known as unconditional conservatism. Basu (1997) considered conservatism as the asymmetric timeliness of earnings reporting, requiring higher verification in recognising good news as gain than recognising bad news as losses. Basu's (1997) model is the most popular measure of conditional conservatism. Under both definitions, reported earnings under conservative accounting are understated rather than overstated.

Conservatism reduces agency conflict and is beneficial for corporate governance in several ways. First, it constrains management's overpayment to themselves and other parties with timely loss recognition and delaying gain recognition (Watts, 2003). Second, it prevents managers from investing in negative net present value (NPV) projects (Garcı´a Lara, Garcı´a Osma & Penalva, 2009). Third, managers are more likely to abandon negative NPV projects under conservative accounting because it causes economic losses from these projects to be recognised on a timelier basis (Watts, 2003). These potential benefits of conservatism in corporate governance indicate a positive relationship between the strength of governance and conservatism (Duellman, 2006).

The extant literature on developed markets has documented that corporate governance mechanisms are related to accounting conservatism (Ahmed & Duellman, 2007; Beekes, Pope & Young, 2004; Lafond & Roychowdhury, 2008). However, corporate governance in China significantly differs from that in developed markets, such as the US and the UK, and other emerging markets. In China, the ownership of companies is concentrated in the hands of the large shareholders and the government has controlling shareholdings in the majority of companies. Moreover, legal enforcement in China is very weak, which causes ineffective corporate governance mechanisms. These institutional characteristics produce interesting

questions of whether and how corporate governance mechanisms affect accounting conservatism in China. There is not much research on the relationship between conservatism and corporate governance in Chinese companies and most research used sample companies from before 2006. After 2006 all listed companies in China were required to adhere to the new accounting standards that reflected accounting conservatism [1] (Xia & Zhu, 2009). Therefore, it is necessary to investigate the relationship between conservatism and corporate governance in China by using more recent data. In addition to the relationship between conservatism and corporate governance, the relationship between corporate governance and firm performance and benefits of conservatism in firm performance are also tested.

China adopted a two-tier board structure, including the board of directors and the board of supervisors to monitor the financial reporting process. The board of directors and the supervisory board are two important governance mechanisms, and this study expects that stronger boards demand more conservatism because conservatism assists the boards in the monitoring role. However, previous research indicated that ownership concentration and state ownership may influence the effectiveness of the board of directors and the supervisory board. For instance, due to their dominant power, controlling shareholders could appoint independent directors who are in favour of them (Lin, 2011). Furthermore, government officials may make use of state proprietorship to create jobs, subsidies, or other benefits as a means of bribery or in exchange for votes and support (Kung, Ting & James, 2008). This allows managers to manipulate financial information to safeguard the interests of controlling shareholders or the state rather than that of all individual shareholders. To examine the negative effect of ownership structure on firms' governance, this thesis investigates whether ownership concentration and state ownership moderate the effectiveness of firms' governance on conservatism and firm performance, respectively. Some studies (Cullinan, Wang, Wang & Zhang, 2012; Kung et al., 2008; Xia & Zhu, 2009; Yu, 2013) have examined the direct effect of ownership structure on conservatism or firm performance for Chinese companies. However, to our best knowledge, no study has tested the moderating effect of ownership

[1] The new accounting standard states that enterprises should keep a conservative attitude when they recognize, measure and report accounting information and should not overestimate earnings or assets and underestimate expenses or liabilities (Ren & Yan, 2011).

concentration and state ownership on the effectiveness of firms' governance for Chinese companies.

1.2 Motivation for the study

Concentrated ownership results in an agency conflict between dominant and minority shareholders in China rather than the traditional agency conflict between managers and shareholders (Kung, et al., 2008; Wei, 2007). This study is motivated first to test the benefit of conservatism in reducing agency conflict. The agency problem in China is more serious because of weak legal protection for minority shareholders (Wei, Xie & Zhang, 2005), therefore it is necessary to examine the usefulness of conservative accounting and the determinants of conservatism in Chinese listed companies.

Most previous research on the relationship between corporate governance, conservatism and firm performance focused on developed markets such as the US and the UK. For instance, Beekes, et al. (2004) showed a positive relationship between independence of the board of directors and conservatism, using a sample of UK companies. Similarly, Ahmed and Duellman (2007) documented that conservatism benefits directors by reducing the agency costs of companies in the US. Daily and Dalton (1992) also found that companies with a greater proportion of independent directors had better firm performance. Indeed, strong boards were shown to adopt accounting conservatism as a governance tool in developed countries (Mohammed et al., 2010). However, the results may not be applied to emerging markets such as China because their corporate governance differs from that of developed markets. There is limited research that has investigated the association between corporate governance and accounting conservatism. Therefore, the second motivation of the thesis is an exploration of the unique features of corporate governance in Chinese companies.

The board of directors is an important internal governance mechanism because it is responsible for the strategic guidance and effective monitoring of management, and is accountable to its shareholders (Tsui, 2010). Conservative accounting is potentially useful for directors to fulfil their role in monitoring important decisions (Ho, 2009). Stronger board of

directors leading to more conservatism indicates that good corporate governance results in higher conservatism. As opposed to the one-tier system in the US and the UK, China has employed a two-tier board structure, including a supervisory board to supervise the board of directors. The two-tier system originates from Germany, however, unlike supervisors in German supervisory boards, Chinese supervisors do not have the power to appoint and dismiss directors and executives. Most prior Chinese studies concentrated on the role of the board of directors rather than the board of supervisors because in most situations, supervisory boards were considered as "rubber stamps" and were established to follow regulations rather than for the exercise of further control. However, the monitoring abilities of supervisory boards have been improved in theory. First, a series of laws, regulations and amendments have recently been issued to protect shareholders' interests by enhancing the monitoring of Chinese listed companies. Supervisory boards which act as important monitoring organs benefit from this improvement of the legal environment (Jia, Ding, Li & Wu, 2009). Moreover, the 1993 Company Law had three amendments in 1999, 2004 and 2005, and these amendments resulted in remarkable progress in terms of enhancement of supervisory boards' monitoring function. For instance, the 2005 Company Law addressed several important constraints that impeded supervisory boards functioning well (Jia et al., 2009). Therefore, in addition to the board of directors, this study also contributes to the literature by empirically examining the role of the supervisory board on conservatism and to examining its practical effectiveness.

Apart from the two-tier board system, the most important institutional difference between China and developed countries is the ownership structure of companies. In developed countries, most company ownership is widely held by a significant number of shareholders while in emerging countries including China, ownership is controlled by a few shareholders, resulting in high ownership concentration. Furthermore, in other emerging countries (except China), most of the listed companies are controlled by individuals, wealthy families and financial institutions (Xia & Zhu, 2009). The government does not hold significant shareholdings in most of the companies (Lin, Hutchinson & Percy, 2009). The situation is different in China since the state has controlling shareholdings in the majority of the publicly listed companies. In 2005, the Chinese authorities issued corporate governance reforms to implement gradual privatisation in state-owned enterprises (SOEs) by transforming the state

held non-tradable shares into tradable shares (Li, Wang & Deng, 2008). However, the state still plays an important role in Chinese companies after the privatisation. By examining a sample of Chinese listed companies in the period of 2007-2009, Cullinan et al. (2012) found that the state acted as the largest shareholder in 62% of the companies in the sample. Therefore, China is different from other emerging countries with concentrated ownership because of the absence of significant ownership controlled by individuals and families, the insignificant role of financial institutions, but the important role of the state. China's unique ownership structure highlights the importance of examining the effectiveness of corporate governance in Chinese companies.

Ownership concentration may influence the use of conservatism because the controlling shareholders have determining power in financial reporting and they are less likely to adopt conservatism because it can disguise their expropriation activities from minority shareholders. In addition, because controlling shareholders have determining power in the appointment of directors and supervisors, they can also affect the decisions of board of directors and board of supervisors on the employment of conservatism and hence reduce the monitoring power of the boards. As a result, ownership concentration is an important factor that needs to be investigated when examining the effect of corporate governance on conservatism and firm performance. Moreover, because the state maintains the controlling shareholdings in the majority of Chinese listed companies, it has the right to appoint the management as a proxy for government intervention (Lin et al., 2009). Research showed that top management in Chinese companies had close political relationship with the government (Xu, Zhu & Lin, 2005). The CEOs of some state-owned companies were retired or acting government officials. These government officials were also nominated as independent directors to the boards since they meet the definition of independent directors set by the regulation. Therefore, it is necessary to examine whether state ownership influences the effectiveness of corporate governance.

Overall, motivated by the unique characteristics of Chinese corporate governance, this study covers the examination of corporate governance and accounting conservatism in Chinese listed companies after the implementation of a set of corporate governance reforms and the issue of new accounting standards relating to accounting conservatism.

1.3 Objectives of this thesis

The aim of this thesis is to examine the relationship between corporate governance, accounting conservatism and firm performance in Chinese companies. Moreover, this study also identifies whether ownership concentration and state ownership limit the effectiveness of corporate governance on conservatism and firm performance.

In order to fulfil the aim, the following questions are posed:

1. "Whether there is an association between two aspects of corporate governance, namely Board of directors and Supervisory board, and the adoption of conservatism, and firm performance, respectively."
2. "Whether conservatism improves performance of Chinese listed companies."
3. "Whether ownership concentration and state ownership moderate the effectiveness of corporate governance on conservatism as well as firm performance?"

Specifically, based on the agency theoretical framework, the study employs characteristics of the board of directors and characteristics of supervisory board to examine the effect of corporate governance mechanisms on conservatism and firm performance in the Chinese context.

1.4 Significance

1.4.1 Contribution to theory

Agency theory argues that the separation of management and ownership may result in a condition where the interests of managers and outside shareholders diverge (Pietra, Grambovas, Raonic & Riccaboni, 2008). Eisenhardt (1989) documented that agency theory is concerned with resolving two problems existing in an agency relationship. One problem is the conflict between goals of the principal and agent. The other problem is that it is costly to

monitor the agent and to remedy the damage due to the wrongdoing of the agent. Thus, the core of resolving an agency problem is about how to align the desires of the principal and agent, and how to monitor management and protect the interests of shareholders. Previous studies (Warfield, Wild & Wild, 1995; Beekes et al., 2004) indicated that managerial ownership may help to align managerial goals with the shareholders. However, the ownership structure of Chinese companies is different from that of companies in developed markets (Shan & McIver, 2011). In China, manager ownership of listed companies is not common and the compensation to managers is fixed rather than performance related. Thus this thesis focuses on the effectiveness of corporate governance mechanisms such as board of directors and supervisory board in reducing agency conflict.

Moreover, due to concentrated ownership, conflict between dominant and minority shareholders rather than the traditional agency conflict between managers and shareholders is prevalent in Chinese companies (Kung, et al., 2008; Wei, 2007). The corporate governance system in China should protect minority shareholders' interests, however, because of the weak legal protection, minority shareholders are subject to the expropriation of wealth by the controlling shareholders (Lin et al., 2009). Thus, the findings of this study will strengthen the understanding of the unique agency conflict in Chinese companies.

Resource dependency theory argues that companies' decision making can be influenced by resource providers. In China, the government is an important resource provider, and thus companies' financial reporting could be influenced by the government. Many previous studies have found that the influence of government is negative. The outcome of this study indicates how government influences Chinese companies' financial reporting.

Positive accounting theory asserts that conservatism can constrain opportunistic behaviour and is beneficial for companies (Yunos, 2011). Much evidence supportive of the theory is based on developed markets such as the US and the UK. The results of this thesis can provide greater insight on whether the positive accounting theory assertion is supported in an emerging economy such as China.

1.4.2 Contribution to policy makers and practice

The codes of Chinese corporate governance have been adopted largely from developed countries. As a transitional country, China has revised its corporate governance practices, starting with the introduction of a Code of Conduct in 2001. Despite the effort to improve governance practices in Chinese companies, many Chinese researchers questioned whether the corporate governance practices designed for developed countries could work effectively in China, which has different political, cultural and economic environment (Lin, 2011). Specifically, Chinese companies have different ownership structure since the ownership of Chinese companies is concentrated and the state controls a majority of companies.

By examining the relationship between internal governance mechanisms and accounting conservatism, the results of this study will help policy makers to evaluate the applicability of the current corporate governance practices for Chinese listed companies and to consider whether the Code of Conduct should be modified to accommodate the Chinese setting rather than copying from the model of developed countries.

An increasing literature has shown that corporate governance in companies that follow China's corporate governance practice is improving (Lin et al., 2009). However, the improvement in corporate governance of China is gradual. The gradual process is characterised by the co-existence of the old practice and the new practice of corporate governance. For instance, the appointment of independent directors was recommended by the China Securities Regulatory Commission (CSRC) in 2001, but was not adopted and independent directors did not play an active role in boards immediately after 2001. Moreover, in 2005, CSRC released the reform to convert the non-tradable shares into tradable share (Cullinan et al., 2012). This reform will result in gradual reduction of state shareholdings but to date the state is still an important shareholder and controls a majority of Chinese companies. The new practice will not be fully accepted until the regulator is satisfied with the practice (Lin, 2011). The findings of this study will help policy makers to understand whether improved governance practices influence conservatism and performance in Chinese listed companies by using more recent data.

1.4.3 Contribution to researchers

The relationship between corporate governance and conservatism has been widely studied in developed markets with widely held shareholdings. This thesis provides an in-depth examination of corporate governance practices in a country where the companies' ownership is concentrated. The outcome from this study thus benefits researchers because it provides empirical evidence relating to the relationship between corporate governance and conservatism in Chinese companies with a different ownership structure. Moreover, this thesis shows the influence of the controlling shareholders on the effectiveness of corporate governance. Another unique factor in China is that ownership is concentrated in the hands of the state. The study will examine the state influence on the corporate governance mechanisms and encourage more studies on China's unique corporate governance. Therefore, this thesis will provide additional knowledge on whether ownership concentration and state ownership moderate the effect of good governance practices on conservatism and firm performance.

Moreover, panel data methodology is used in this study. Panel data are typically known as data including time observations of a quantity of individuals. Since the sample in this thesis includes data both across companies and over time, panel data methodology is adopted. Panel data provide the researcher a large quantity of data points, which increases the degree of freedom and decreases the collinearity among explanatory variables (Hsio, 2003). The outcomes of this study may provide more understanding of panel data methodology.

In general, this thesis fills the gap of governance research in China relating to accounting conservatism. Many Chinese studies (Wei, 2007; Shan & McIver, 2011; Leung & Cheng, 2013) examined the effectiveness of corporate governance by assessing the relationship between corporate governance and firm performance. However, the research on the relationship between corporate governance and conservatism is limited. The findings of this thesis indicate whether the existing corporate governance is effective in improving the employment of conservatism. Therefore, building on limited literature, this thesis provides further findings relating to conservatism.

1.4.4 Contribution to users of financial statements

Financial information is used to evaluate companies' financial position and to predict the companies' future performance. Investors, financial analysts and creditors will obtain accounting information of the company through financial statements for their decision making. However, opportunistic earnings management misleads the users of financial statements and decreases users' confidence (Lin et al., 2009). Since conservatism can constrain opportunistic behaviour and ensure reliable financial information, it is important for users of financial statements to understand the factors that influence the company's use of conservatism (Yunos, 2011). By understanding more about the accounting information in financial statements, the users can make more informed decisions.

1.5 Research methods

This thesis examines conservatism in an objective manner, thus archival data from companies' annual reports are mainly used. This thesis uses more recent data than previous studies and variables are collected from the online annual reports and Datastream. The sample in this study consists of 3,876 firm-year observations from 2007 to 2010. Two measures: accrual-based measure and asymmetric timeliness measure modified by Roychowdhury and Watts (2007) are employed to proxy conservatism. Two accounting-based measures: return on equity (ROE) and profit margin (PM) are mainly used to measure firm performance. A market-based indicator: market to book ratio (MTB) is also used as an alternative firm performance measure. Using the above measures of conservatism and firm performance, this thesis examines the effect of characteristics of board of directors and supervisory board on conservatism and firm performance. Nine characteristics of the two boards are employed: board independence, board size, board meetings, CEO duality, top management turnover, supervisory board independence, supervisory board size, supervisory board meetings and supervisory board qualifications. Moreover, this thesis also identifies whether ownership structure moderates the effect of corporate governance on conservatism and firm performance. Panel data methodology, which suits the analysis of longitudinal data, is employed in this study.

1.6 Structure of the thesis

The remainder of the thesis is organised as follows. Chapter 2 presents the literature on corporate governance, conservatism and the moderating influence of concentrated ownership and state ownership. Chapter 3 outlines the research framework of the thesis and hypotheses development. Chapter 4 covers the sampling method, data collection processes, measurement of variables and models used to test the hypotheses. The descriptive analysis, correlation analysis and the results of multivariate analysis and discussion of the results are detailed in chapter 5. Finally, chapter 6 presents a summary of the findings, their implications and limitations. It concludes with recommendations for future research in this field of research.

Chapter Two: Literature Review

2.1 Introduction

The research on conservatism and corporate governance is considerable and mainly based on agency theory and positive accounting theory. Ownership structure and corporate governance mechanisms are purported to be important for firms' financial reporting and firms' performance in developed markets. However, it is expected that ownership structure and these mechanisms are less effective in reducing agency conflict in Chinese companies due to the determining power of controlling shareholders and weak legal enforcement. This chapter reviews the relevant literature on the relationship between conservatism, corporate governance and firm performance with a particular focus on Chinese companies.

This chapter includes an extensive review of research literature about conservatism, internal governance mechanisms, including board of directors and board of supervisors, and ownership structure. It begins with a discussion of accounting conservatism, followed by an overview of corporate governance in China. Next, it reviews previous research relating to corporate governance and conservatism. A detailed review of characteristics of the two boards in Chinese listed companies is presented in the fifth and sixth sections. Moreover, the influence of ownership structure on conservatism and firm performance is reviewed. Finally, it outlines the theories relating to this study.

2.2 Conservatism

2.2.1 Definition of conservatism

According to Chung, Firth and Jeong-Bon (2003), accounting practices, rules and standards introduced conservative accounting into financial accounts. Professional accounting bodies and standard setting agencies such as the Financial Accounting Standards Board (FASB), have set standards for conservatism. For example, Statement of Financial Accounting

Concepts No.2 stated that "if two estimates of amounts to be received or paid in the future are about equally likely, conservatism dictates using the less optimistic estimate".

Although conservatism has been recognised in current international framework, there is a trend in moving away from conservative accounting to fair value accounting (Lu & Trabelsi, 2013). The wide adoption of International Financial Reporting Standards (IFRS) which requires companies to incorporate more fair value into financial statements is a typical example. The intention of the exclusion of conservatism is because of the criticism that it introduces bias into accounting and is not consistent with the goal of achieving more neutral information (IASB, 2006). Criticisms of accounting conservatism have been long discussed in previous studies. For instance, Hendriksen and Van Breda (1992) argued that conservatism was a very poor method to solve uncertainty in valuation and income, and it led to a distortion of accounting data. They believed that conservatism may also result in a lack of comparability because there could be no uniform standards for its implementation. Furthermore, Penman and Zhang (2002) claimed that conservatism created hidden reserves and resulted in lower quality earnings. Similarly, Belkaoui (1992) and Hendrikson (1977) argued that due to the understatement of income or assets, conservatism resulted in a misunderstanding of current income or assets and led to inaccurate accounting data.

Despite criticisms of adopting conservatism, the concept of conservatism has developed for more than ten decades, indicating the importance of understanding conservatism. Uncertainty is unavoidable in business; accountants must make estimates when recognising assets, liabilities, equities, revenues, and expenses. Advocates of conservatism have stated that abandonment of the conservatism principle could affect managerial behaviour and have negative economic consequences. An example of the negative consequences is the rise of accounting scandals because of exaggerating performance numbers to get more rewards for managers (Whittington, 2008). Conservatism constrains the managers' intention to boost the firms' financial values. Thus, conservatism is a necessary approach for managing uncertainty or risks inherent in transactions since it can protect the interests of investors, creditors and other users (Lin & Chen, 1999). In addition, Watts (2003) indicated that the critics of conservatism did not take into account the usefulness of conservatism in the contracting explanation. The results of Lu and Trabelsi (2013) study indicated that the level of

accounting conservatism of European companies reduced after mandatory IFRS adoption in 2005 and reached the lowest level before 2008. However, conservatism increased significantly in 2008, likely because of the global economic crisis. This finding suggests that conservative accounting is an efficient mechanism to increase information credibility. The research on conservatism thus still remains important and relevant.

2.2.2 Conservatism in China

Conservatism is considered as a very important requirement of accounting information and attracts the attention of both researchers and accounting practitioners (Cullinan, et al., 2012). However, conservatism has practically been prohibited for almost 60 years since 1949 in China (Lin & Chen, 1999). There are several reasons for the restriction of conservatism in China. First, conservatism was considered as inappropriate for the socialist economy in China. Under the traditional communist principle, conservatism was criticised as a tool to manipulate income or to create 'business secrecy' by capitalists. Second, the government was concerned that conservatism would result in reduced reported income of enterprises, and thus may be associated with a decline in fiscal revenues for the state as companies were mostly owned by the government. Finally, to properly apply conservatism, adequate training and skills to exercise professional judgement are required. Chinese accounting professional bodies worried that the shortage of such training for Chinese accountants would cause confusion in the practice of applying conservatism. In 1993, a new accounting system was introduced by the Chinese government to align its accounting with international accounting practice. The new system was very close to the international accounting standards, but gaps still remained. The major difference was the absence of conservatism in accounting standards and practices (Lin & Chen, 1999). Conservatism was not regulated as one of the accounting information requirements until 2006 when the New Accounting Standard for Business Enterprises was issued in China. This new standard changed many provisions relating to conservatism and claimed that enterprises should adopt a conservative attitude when they recognise, measure and report accounting information, without overstatement of assets or earnings and understatement of liabilities or expenses (Ren & Yan, 2011).

2.2.3 The demand for conservatism

Although conservatism suffered some criticisms as explained before, it is vital for efficient corporate governance (Narayanan & Burkart, 2005). The demand for conservatism originates from its important role in contracting (Lim, 2011). The contract between shareholders and managers is one of the most important contracts. Managers are employed to operate companies on behalf of shareholders. Because of limited tenure and limited liability, managers have the tendency to take advantage of asymmetric information between them and shareholders to maximise their own wealth rather than shareholders' wealth. The users of financial statements benefit from conservatism because it limits managers' opportunistic payments to themselves or other parties and mitigates agency conflict caused by information asymmetries (Garcı´a Lara et al., 2009).

Although accounting standards provide accounting rules, flexible interpretations are often allowed on the application of the standards. Management can make use of this flexibility to manage earnings to achieve self interest (Molenaar, 2010). Healy and Wahlen (1999, p.368) gave a formal definition of earnings management:

"*Earnings management occurs when managers use judgement in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers"*.

Managers rewarded with a bonus are more likely to adopt accounting methods that can improve reported income in the current period because their returns are affected by accounting numbers (Molenaar, 2010). Therefore, an executive compensation scheme is an incentive for earnings management. Empirical studies showed that incentive-based payment, especially the use of options, has led managers to manage earnings in order to meet performance targets. For instance, Cornett, McNutt and Tehranian (2009) showed that CEO pay-for-performance sensitivity was positively associated with earnings management. The pressure on managers to manage earnings is different across countries, although opportunism is produced by the same incentive (Brown, Beekes & Verhoeven, 2011). Brown and Higgins (2001) showed that US managers were more likely to adopt earnings management compared

with other countries because stock and option compensation to US managers was higher. In addition, Garcı´a Lara et al. (2009) argued that management in firms approaching bankruptcy were more likely to engage in income-increasing earnings management.

In a developed market where shareholding is widely held, and ownership and management are separated, earnings management is driven by the incentive to increase the company's share price because managerial compensation is usually based on the share price. However, this motive is not relevant in some less developed markets where ownership is highly concentrated and the controlling shareholders have determining power (Ding, Zhang & Zhang, 2007). China's stock market is a typical example. Research has found that earnings management was prevalent in Chinese listed companies arising from a different motive — to boost earnings to achieve authorisation for an initial public offering (IPO), aimed at releasing new shares or to avoid being delisted (Ding et al., 2007). Previous research (Chen & Yuan, 2004; Liu & Lu, 2007) showed that earnings management activities usually occurred in Chinese companies before IPOs, when facing the risk of being delisted. This is not surprising because reported profit is a government required criterion to go public, and also the important determinant of offer prices.

Ownership structure may also influence incentives for earnings management. For instance, Jiraporn and DaDalt (2009) found that earnings management in family controlled firms was less prevalent than in other firms because there was less pressure to manage earnings so as to meet expectations of shareholders. According to Ding et al. (2007), the conflict between dominant shareholders and minority shareholders resulted in earnings management in China. The expropriation by controlling owners can lead to lower actual earnings. Therefore, controlling owners will engage in income-increasing earnings management to disguise their misbehaviour.

Previous researchers (Chen, Hemmer & Zhang, 2007; Molenaar, 2010; Watts, 2003; Gao, 2011; Iyengar & Zampelli, 2010) have found that accounting conservatism reduced management's incentives to overstate reported earnings and thus made accounting reports more informative. Conservatism reduces the effects of the news on share prices and thus reduces the benefits from managing earnings. By limiting opportunities for earnings

management and providing reliable performance measures, conservatism ensures the compensation to the agent better reflects real firm performance (Iyengar & Zampelli, 2010). Chen, Elder and Hsieh (2007) showed that the level of earnings management was lower in companies with conservative accounting than those with non-conservative accounting. Moreover, conservatism can constrain managers, who have short-term horizons, from investing in projects with negative net present value (NPV) because it makes managers aware that recognition of losses cannot be deferred (Garcı´a Lara et al., 2009). Duellman (2006) examined the benefits of conservatism in corporate governance, and the results indicated that conservatism could prevent managers entering into negative NPV projects and could uncover negative NPV projects on a more timely basis. Due to these benefits, conservatism is commonly considered as an indicator of earnings quality (García Lara, García Osma, & Penalva, 2007) and is beneficial for a company's value (Watts, 2003).

Traditional agency conflict between managers and shareholders is not dominant in Chinese companies due to concentrated ownership. Instead, the unique corporate ownership structure induces agency conflict between the dominant shareholders and minority shareholders. Conservatism is in demand in China because it can alleviate the agency conflicts and reduce moral hazard problems (Kung, Cheng & James, 2010). Conservatism is shown to be beneficial for minority shareholders because it can reduce the amount of inappropriate capital investment, thus limiting the power of the management and dominant shareholders (Xia & Zhu, 2009).

2.2.4 Factors influencing conservatism

Ball, Kothari and Robin (2000) proposed that accounting measurement was more conservative in common-law countries than code-law countries because of the different economic role of financial statements. In the common-law countries, companies' ownership is widely held by a significant number of shareholders who monitor management through laws, regulations and accounting information and can sue managers if they do not report timely bad news through financial statements. Responding to this demand for conservative measures, managers would increase the asymmetry in recognising of good and bad news in earnings (Garcı´a Lara, Garcı´a Osma & Mora, 2005). In contrast, concentrated ownership

and direct monitoring are prevalent in companies in code-law countries where shareholders rely less on annual accounts to understand financial affairs because of their close relationship with managers (Garcı´a Lara et al., 2005). Although China generally does not satisfy all the characteristics of a code-law accounting system, its financial reporting practices are an adaptation of that model (Kung, et al., 2008). Therefore, listed companies in China are expected to employ less conservatism due to concentrated ownership.

Timely information on the adverse risk of creditors' loans can be provided by conservatism, thus creditors will require companies to adopt conservatism to protect their interests (Xia & Zhu, 2009). Therefore, debt level is also a factor influencing conservatism. However, debt is not effective in fostering conservatism for state-owned enterprises (SOEs). Currently, big four state owned commercial banks dominate the Chinese banking sector: the Industrial and Commercial Bank of China (ICBC), the Agricultural Bank of China (ABC), the Bank of China (BOC) and the People's Construction Bank of China (PCBC). These banks are jointly involved in more than 60% of the total financial assets; and the funds of most listed companies are from the four banks (Chen & Huang, 2007). To date, the banking system in China is still controlled by the government (Li, et al., 2008). The banks often provide lending to SOEs or listed companies connected to the state with little ability to repay since all losses will be covered by the government. This relationship diminishes monitoring of the quality of financial statements in Chinese companies by the banking sector.

The adoption of conservative accounting is also influenced by firm size. As Watts and Zimmerman (1978) indicated, larger firms faced more political costs which made them more inclined to adopt conservatism. However, Kung et al. (2010) argued that large companies in China were SOEs with high state ownership and these companies were more likely to decrease the demand for recognising bad news on earnings promptly. Therefore, Kung et al. (2010) expected that firm size would be negatively associated with conservatism for Chinese firms.

2.2.5 Measurement of conservatism

Basu's (1997) model is the most popular measure of conservatism and is based on the notion that conservatism includes asymmetry in the timeliness of incorporating bad news and good news in reporting earnings (Givoly & Hayn, 2000). Conservatism is defined in his study as:

"*the accountant's tendency to require a higher degree of verification to recognize good news than to recognize bad news in financial statement. Under my interpretation of conservatism, earnings reflect bad news more quickly than good news*" (Basu, 1997).

Basu (1997) conducted tests on earnings instead of balance sheet values because the Committee on Accounting Procedures (CAP) stated that "conservatism in the balance sheet is of dubious value if attained at the expense of conservatism in the income statement, which is far more significant". In order to test asymmetric timeliness, Basu used positive and negative unexpected annual stock returns to represent good and bad news. Accordingly, the measure of conservatism is the excess of stock price movement with earnings reflecting 'bad news' over that reflecting 'good news' (Basu, 1997). Since the publication of Basu's research, numerous studies have employed asymmetric timeliness of earnings to examine the level of accounting conservatism. However, this model has been criticised because of measurement errors and econometrical instability (Xia & Zhu, 2009). Ryan (2006) acknowledged the limitations, but agreed that asymmetric timeliness should remain the dominant measurement of conditional conservatism.

Another important measurement of conservatism was proposed by Ball and Shivakumar (2005) who relied on the relationship between accruals and cash flow from operations. The advantage of this approach is that it is not dependent on market measures, thus the risk of making incorrect inferences because of an inefficient market is reduced. Accrual-based conservatism suggested by Givoly and Hayn (2000) is also an important measurement of conservatism. They argued that an increase in accounting conservatism resulted in negative nonoperating accruals. The advantage of this approach is that it is not based on market measure and that it is firm-year specific (Garcı´a Lara et al., 2009).

2.3 Corporate governance

Corporate governance has emerged as a key topic in transition economies in recent years. Managers, directors and owners have understood the benefits of a good corporate governance structure (McGee, 2008). According to Weiss (2000), the World Bank defined corporate governance as "the manner in which power is exercised in the management of a country's economic and social resources for development". Shleifer and Vishny (1997) stated that corporate governance deal with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment. Nevertheless, it is argued that Shleifer and Vishny's (1997) definition specifically applied to the US and the UK. Clarke (2006, p. 145) defined corporate governance in China as "the set of rules and practices regulating relationships among participants in a post-traditional Chinese business enterprise and governing decision making within that enterprise". Clarke (2006) considered a 'post-traditional' enterprise as one that is not controlled by the state through the traditional state planning system. Conflicts of interest arise between management and shareholders because of their different goals, and methods to mitigate the conflicts are considered as corporate governance mechanism (Suh, 2009).

Due to the collapse of Enron and Arthur Andersen in the US, corporate governance has become increasingly important (Khanchel, 2007) and international organisations have paid more attention on governance issues. For instance, the International Monetary Fund required governance improvements to be included in its debt relief program. Moreover, the Organisation for Economic Co-operation and Development (OECD) has issued *OECD Principles of Corporate Governance*, aiming to assist both member and non-member countries to evaluate and improve the legal, institutional and regulatory framework for better corporate governance (Khanchel, 2007).

2.3.1 Corporate governance in China

Corporate governance in China has changed greatly during the past three decades due to the liberalization and development of the Chinese economy. Prior to 1978, the planned economy

was characterized by all enterprises being owned by government or the community (Liang & Useem, 2009). Business enterprises were the only producing units for realising national economic plans and were run with centralized planning and control. Government authorities directly appointed managers at different levels. Due to highly centralized governmental controls, the importance of corporate governance was ignored in that period (Lin, Liu & Zhang, 2006). With the enforcement of reform and the opening-up of policy in the late 1970s, the Chinese economy has undergone a transition from planned to market-oriented (Kung et al., 2010). In the 1980s, small SOEs and collectively owned enterprises began issuing shares to the public leading to a rapid increase in company issued securities in 1990. In response, the Chinese government authorized the cities of Shanghai and Shenzhen to establish national stock exchanges (Liang & Useem, 2009). The China Securities Regulatory Commission (CSRC) is responsible for monitoring and regulating stock exchange activities (Wu, 2011). Corporate governance in China is developing alongside economic reform.

Corporate governance has become a higher priority in Asia, especially after the 1997 Asian financial crisis (Li, Naughton & Hovey, 2009), because weak corporate governance was a major cause of the crisis. Corporate scandals in China, such as the disclosure of false information by a blue chip company — Ying Guang Xia — in 2001 about various production facilities that in fact never existed, have highlighted the importance of corporate governance in China (Tsui, 2010). 2005 was named as the Year of Corporate Governance because in that year both the Company Law and the Securities Law of the People's Republic of China underwent significant amendments (Tsui, 2010). Although a set of governance laws, regulations and standards has been issued to develop corporate governance, their enforcement was weak, resulting in ineffective corporate governance in China. This is despite many of China's reforms receiving high marks from the World Bank and the International Monetary Fund (Liang & Useem, 2009). Moreover, according to Liang and Useem (2009), a study conducted by Canada's Centre for International Governance Innovation (CIGI) in 2006 claimed that China ranked first among 10 Asian nations in adopting governance principles. However, China's actual governance practices were rated ninth among the 10 Asian countries by the same CIGI study. This suggests that company compliance and public enforcement of the reforms were not effective in China.

OECD has been used as a benchmark for corporate governance codes in transition economies, including China. The OECD Principles are mainly concerned with listed companies and "are organized into five sections: (1) the rights of shareholders, (2) the equitable treatment of shareholders, (3) the role of stakeholders in corporate governance, (4) disclosure and transparency and (5) the responsibilities of the board" (Fremond & Capaul, 2002, p. 6). According to Tsui (2010), the corporate governance framework of China is consistent with the OECD principles. However, the effectiveness and enforcement of the framework is hindered significantly by practical factors such as political interference by the State, the realities of the two boards and the lack of detailed legislative guidance on Company Law.

2.3.2 Stock exchanges in China

Two stock exchanges exist in China: Shanghai stock exchange and Shenzhen stock exchange. The two exchanges are governmental institutions directed by the Chinese Securities Regulatory Commission (CSRC). The original aim of the stock exchanges was to help SOEs raise funds and improve their performance (Ding, et al., 2007). The Shanghai stock exchange, formed in 1990, is the largest stock market in China in terms of the number of listed companies, total market value and tradable market value. The Shenzhen stock exchange was also founded in 1990 and it mainly focuses on developing small and medium companies (Lin, 2011). Some Chinese companies are also listed overseas in the Hong Kong and New York markets. This study only includes companies listed on the Shanghai and Shenzhen stock exchanges since those companies listed in Hong Kong and New York stock exchanges need to follow Hong Kong and New York listing requirements rather than Chinese listing requirement.

2.3.3 China Securities Regulatory Commission (CSRC)

The CSRC is the counterpart of the Securities and Exchange Commission (SEC) in the US or the Australian Securities & Investments Commission (ASIC) in Australia (Wu, 2011). The CSRC was formed as a centralised supervisory system for securities and futures markets and has direct leadership over the markets. It also has a responsibility to draft laws and

regulations for securities markets. The rules on corporate governance have been adopted from western countries; however, the corporate governance practices in China are different because of the changing political, cultural and economic environment (Lin, 2011). The CSRC regulates listed companies to ensure that they comply with these Chinese corporate governance practices.

2.4 Accounting conservatism and corporate governance

The relationship between conservative accounting and corporate governance relies on the important role of each in facilitating efficient contracting (Lim, 2011). To ensure that contracts are enforceable, conservatism is in demand because the reliability and quality of financial statements are important in the monitoring mechanism (Mohammed, 2011). Recalling the benefits of conservatism described in Section 2.2.3, in general, conservatism avoids the reduction of firm value because it constrains excessive payments to management and helps to identify negative-NPV investment due to timely loss recognition (Ball & Shivakumar, 2005). The potential benefits of conservatism in corporate governance suggest positive association between corporate governance and conservative accounting.

Empirical studies on accounting conservatism and corporate governance showed that internal corporate governance mechanisms including board of directors, and management ownership are important factors in determining the level of conservatism. For example, Beekes et al. (2004) demonstrated that board composition and managerial ownership were significantly related to the level of conservatism. A majority of studies supported a positive relationship between corporate governance and accounting conservatism. However, Chi, Liu and Wang (2009) argued that conservative accounting is a vehicle to reduce uncertainty and information asymmetry as a substitute to corporate governance mechanisms. Therefore, they supported a view that weak corporate governance structures resulted in more contracting demand for conservatism.

Although studies consistently showed that accounting conservatism played a significant role in corporate governance by showing a positive relationship between conservatism and

corporate governance mechanisms, the corporate governance characteristics examined were mostly in diffused shareholdings markets. Little is known about the role of conservatism in corporate governance of companies with different agency conflicts which are between controlling shareholders and minority shareholders (Mohammed, 2011). Such agency conflicts are found to exist in Chinese companies with significant shareholders controlled by the state.

2.5 Board of directors

The German-Japanese and Chinese models of corporate governance adopt a two-tier board structure, including a board of directors and a supervisory board. This is an important governance structure for protecting minority shareholders (Hu, Tam & Tan, 2010). The decision to adopt a two-tier board system was made in the early 1990s in China, partly due to questionable related-party transactions between directors and their enterprises (Shan & McIver, 2011).

The board of directors plays an important role in corporate governance. Directors, who are appointed by shareholders, are expected to monitor the behaviour of management and minimise the costs from the separation of ownership and control. They have ultimate rights on the appointment, dismissal and rewards of management (Lin, 2011). The boards of Chinese listed companies include both executive and non-executive directors. The new Company Law, effective from 2006, has provided the following duties and responsibilities of directors in Chinese companies (Yuan, 2009):

- limited liability companies and joint stock companies are required to set up a board of directors;
- the number of directors should range from 3 to 13 for a limited liability company and 5 to 19 for a joint stock company;
- the board of directors has the responsibility of appointing and removing management;
- directors and managers must faithfully perform their duties, protect the company's interests, and ultimately answer to shareholders; and

- a director's appointment should not exceed three years, subject to reappointment for a further term.

2.5.1 Independence of board of directors

Agency theory and resource dependence theory highlight the importance of independent directors for good corporate governance so that the board of directors can appropriately oversee management and protect the interests of other parties, particularly shareholders (Brown, et al., 2011). Independent directors are more likely to monitor the firm's financial reports more effectively than executive directors, first, because they are less likely to be influenced by the managers and thus are able to give independent views on management (Lim, 2011). Second, independent directors can bring in monitoring skills learned from other boards (Fama & Jensen, 1983). From 2001, CSRC required the board to comprise a minimum of one-third directors (Shan & McIver, 2011) who are independent from both the listed company and its controlling shareholders (Li et al., 2008). In addition, to borrow the best practices from mature economies, the amended Company Law in 2006 made independent directors another mandatory requirement for all Chinese listed companies (Wang, 2013). Article 1.1 of the "Guidelines for Introducing Independent Directors to the Boards of Directors for Listed Companies" defines an independent director as "one holding no other post in a company, as well as maintaining no relations with the company or its major shareholders which could prevent the independent director from making objective and independent judgments" (Tsui, 2010, p. 6). Minority shareholder views should be reflected fully in the election of directors (Li et al., 2008) and independent directors are expected to protect the interest of minority shareholders in order to maintain their own good reputation in society (Shan & McIver, 2011).

However, Chinese listed companies are characterized by the problems of insider control and weak independence of the board of directors because of high ownership concentration and control by large shareholders (Shan & McIver, 2011). For instance, governmental officials are usually appointed in SOEs by the state. According to the definition of independent directors in "Section 3, recommendation for establishment of independent director system in

Chinese listed firms" CSRC (2001)[2], a government official can be qualified as an independent director (Lin et al., 2009). However, the independence of government officials is questionable due to the close connection with the state. In some circumstances, these independent directors can help government to manage earnings for political motives (Chen, Lee, & Li, 2008). Appointing them simply because they meet the definition of independent directors may not help to provide reliable financial reports (Lin et al., 2009).

By law, dominant shareholders have more authority on the appointment of directors because of the principle of one share one vote. Therefore, as Clarke (2006) noted, although the CSRC wants the election of directors to also reflect minority shareholder interest, it was unlikely that such directors would join the board. Li et al. (2008) found that approximately 80% of directors on boards of Chinese listed companies were closely related to the state. Therefore, many independent directors do not have any substantial influence on their companies and their presence is only symbolic (Wei, 2007). In addition, in a sample of 855 firms in Xia and Zhu's (2009) study, the boards comprised less than one third outside directors, which was close to the minimum standard required by the CSRC. This indicates that Chinese listed companies did not have strong incentives for appointing such directors to the board, other than for complying with the regulation.

Director independence is widely perceived to be a crucial factor for good corporate governance because it can make the board fulfil its legal duty properly to oversee management and protect shareholders' interests. There is international research indicating that effective independent directors had a positive impact on financial reporting quality and firm performance.

[2] ..... the following persons are not classified as independent directors: (1) the relatives of the employees in the listed firm and affiliates. Relatives refers to a spouse, parent, children, brother, sister, parents in-law, son and daughter in-law, son and daughter in-law, brother and sister in-law; (2) persons directly or indirectly holding 1% of the issued shares, or one of the top 10 shareholders, or the direct relative of a top 10 shareholders; (3) the employees and their relatives in companies holding 5% of the issued shares or companies which are among top 5 shareholders; (4) in previous years, the person was classified in category (1) to (3) above; (5) persons providing financial, legal, and consulting advice; (6) other persons classified as non-independent directors by the company's Constitution; (7) other persons classified as non-independent directors by the CSRC.

Research in developed countries

Research in developed countries indicated that effective independent directors were related to higher level of earnings quality. In US, Beasley (1996) investigated the association between the possibility of financial statement fraud and board composition. By adopting a sample of 75 fraud and 75 non-fraud companies, he indicated that non-fraud companies had higher proportion of outside directors than fraud companies. Subsequently, Klein (2002) indicated a negative relationship between independence of board of directors and abnormal accruals. Reductions in board independence were followed by significant increases in abnormal accruals. The results suggested that board independence was effective to monitor corporate financial accounting process. Consistent with Klein (2002), Cornett, et al. (2009) found that the presence of independent directors reduced the use of discretionary accruals. Based on US companies, Ahmed and Duellman (2007) and Duellman (2006) found a positive relationship between board independence and conservatism. Moreover, in UK, Peasnell, Pope and Young (2005) showed that the proportion of outside directors was negatively related to income-increasing abnormal accruals, using the largest 1000 listed companies from 1993-1995 as a sample. Beekes et al. (2004) examined the relationship between board of directors and accounting quality, using earnings timeliness and conservatism as proxies. Employing a sample of UK companies, their results indicated that companies with a higher proportion of outside directors recognized bad news in earnings in a timely manner.

A majority of previous research has indicated that higher levels of board independence led to better corporate performance. For instance, among 100 fast-growing, small publicly-held US firms in 1990, Daily and Dalton (1992) found those having a greater proportion of independent directors outperformed the remainder using price/earnings ratio to measure performance. However, other evidence did not support the usefulness of independent directors. For instance, in US, Coles, McWilliams and Sen (2001) found that having outside directors was inversely associated with firm performance measured by market value added. In Canada, Klein, Shapiro and Young (2005) reported that board independence was negatively related to firm performance measured by Tobin's Q, because ownership of many large firms was concentrated in the individuals, families or private holding companies.

For a sample of companies listed on the Bucharest Stock Exchange, Vintila and Herghina (2013) found a positive influence of the percentage of independent directors on firm value. However, beyond a threshold of their representation of 47.23 percent, their influence becomes negative. Best Practice Recommendations of the Australian Stock Exchange (ASX) also recommend that a majority of the board should be independent directors (Chen, Dyball & Wright, 2009).

In summary, a majority of prior studies in developed countries found significant results and indicated that independent directors were beneficial for company's earnings quality and performance.

Evidence from countries other than developed countries

García Osma and Noguer (2007) indicated that, in contrast to UK and US based research suggest, independent directors were not effective in constraining earnings manipulation in Spain. They found that reduction in the percentage of independent directors was related to lower level of earnings management. Jaggi and Tsui (2007) also suggested that the presence of independent directors was positively associated with earnings management in Hong Kong listed companies as 85% of them were controlled by family. However, Abdullah (2006) showed that board independence was not associated with a firm's distressed status, based on Malaysian evidence. Consistent with results of studies based on developed countries, Yunos, Smith and Ismail (2012) and Ho (2009) supported the agency theory and found that a higher proportion of independent directors leads to higher conservatism in Malaysian companies. Moreover, Muttakin, Khan and Subramanian (2012) investigated the relationship between board structure and firm performance of Bangladeshi companies and found that a greater proportion of independent directors was associated with better firm performance.

In China, some researchers (Shan & McIver, 2011; Peng, 2004; Cho & Rui, 2009) found that the percentage of independent directors was positively related to corporate performance. Additionally, Li et al. (2008) showed that firms with a higher proportion of independent directors had a lower probability of financial distress, based on 404 matches of distressed and non-distressed firms. In terms of the effects of board independence on earnings quality, Lin,

Fan and Cheng (2011) reported a positive relation between board independence and accounting conservatism with a sample of Chinese listed companies from 2007 to 2009. In contrast, Chen (2002) concluded that independent directors were negatively related to firm performance based on 55 listed Chinese companies. Tian and Lau (2001) showed no significant relationship between board independence and firm performance. Lai (2005) indicated that voluntary adoption of independent directors prior to the CSRC regulation on board independence was associated with lower earnings management. For companies employing independent directors following the CSRC regulation in 2001, there were no differences in the levels of earnings management before and after the regulation. His results suggested that the quality benefit from independent directors in China was questionable and companies adopted them to the board with a desire to meet the regulatory requirement rather than to improve corporate governance. The effectiveness of independent directors may be impeded in companies with concentrated ownership due to the intervention by the dominant shareholders (Lin, 2011). Therefore, this paper will demonstrate whether the independence of board of directors is weakened by the controlling shareholders.

2.5.2 Board size

In addition to board independence, board size, based on the number of directors can also influence its effectiveness. The number of board directors is different from country to country, or company to company due to the differences in culture, regulation and ownership structure. Generally, larger boards are less effective due to difficulties with task coordination (Firth, Fung, & Rui, 2007). Yermack (1996) indicated that large boards made decisions slower and had less discussion on managerial performance. The costs arising from these problems may outweigh the benefits of a large board. Accordingly, Lipton and Lorsch (1992) argued that when a board included more than ten directors, it became more difficult for them all to express their opinions and ideas in the limited time at meetings.

Previous studies suggested that large boards may have negative effect on the effectiveness of corporate governance and firm performance. The results of Yermack (1996) showed that board size was negatively associated with firm value based on a sample of 452 large US companies from 1984 to 1991. Ho (2009) suggested that larger boards tended to exhibit less

conservatism for Malaysian companies. Rahman and Ali (2006) and Vafeas (2000) also found that earnings in firms with smaller board size were more informative. In addition, Chang's (2009) results showed that a firm with a larger board had a greater probability of financial failure based on a sample of Taiwanese firms.

Conversely, some researchers argued that a large board was beneficial to companies. Dalton and Dalton (2005) stated that larger boards could have more experience, knowledge and opinions and therefore provide access to more resources and networking opportunities. Through a meta-analysis of 131 sample companies, Dalton, Daily, Johnson and Ellstrand (1999) demonstrated that board size was positively related to firm performance. Muttakin et al. (2012) also suggested that larger boards provide valuable business experience, expertise, skill and social networks and thus have positive effect on firm performance of Bangladeshi companies. National factors may be influential as Bonn, Yoshikawa and Phan (2004) found that the relationship between board size and the performance of Japanese firms was negative while no association was evident between board size and performance of Australian firms. In terms of the effect of board size on financial reporting, Xie, Davidson and Dadalt (2003) argued that larger boards were related to lower levels of earnings management. However, Yunos et al. (2012) showed that board size was not associated with conservatism in Malaysian firms.

In terms of the optimal size for a board of directors, different researchers have different views. Jensen (1993) suggested that the maximum number of board of directors should be seven or eight and that, when boards exceeded that number, they were less likely to function effectively. Lipton and Lorsch (1992) favoured boards of eight or nine while the Olivencia Report argued for an ideal size of between five to 15 directors (García Lara et al., 2007). Chinese Corporate Law suggests that the number of directors should be between five and 19 people.

Some empirical studies focusing on Chinese companies indeed showed a positive relationship between smaller board and corporate performance. For instance, Hu et al. (2010) investigated 1271 Chinese listed companies and found a negative relationship between board size and corporate performance using Tobin's Q as performance measure. Shen and Zhang (2002)

compared the board size of 82 Chinese listed companies receiving special treatment (ST) during 1998 to 2000 and 82 matched non-ST companies. In China, ST companies are treated as operational failures. The results of Shen and Zhang (2002) indicated that ST companies had larger board size compared to non-ST companies. However, Cho and Rui (2009) found non-significant correlations between the size of the board and corporate performance using market to book value of equity as a performance measure for a sample of Chinese listed companies. Cho and Rui (2009) also asserted that earnings in a company with a larger board were less informative. However, Tang and Xu (2007) and Yang, Yang and Sun (2008) showed board size was not significantly associated with earnings management in Chinese listed companies. Yu, Shen, Huang and Liu (2008) argued that the association between board size and firm value may be influenced by firm size. Their results showed that there was a positive relation between board size and firm value for small and medium Chinese firms while the relation was not significant for large Chinese firms. Overall, research on the influences of board size on earnings quality and firm performance revealed inconclusive results in China.

2.5.3 Board meeting

A higher number of board meetings per year indicates more active directors who are perceived to foster greater oversight of the company (Firth et al., 2007). Conger, Finegold and Lawler (1998) suggested that board meetings were important for directors to perform their duties. Directors in boards with more meetings have more opportunities to protect the interests of shareholders (Vafeas, 1999) and should be able to spend more time on constraining management's misbehaviour such as earnings management. A board that seldom meet may only rubber-stamp management plans (Xie et al., 2003). An adverse view is that more board meetings are not beneficial because outside directors spend limited time and thus extra meetings are not held for a meaningful exchange of ideas with management or among the directors themselves (Vafeas, 1999). CEOs usually pre-set the contents of meetings at routine board meetings and thus the time is limited. If an unusual situation occurs, e.g. financial distress or declining performance, the number of board meetings would be increased to discuss the solution. Specifically, Vafeas (1999) found that boards with more meetings were associated with poor performance. In addition, Chen, Firth, Gao and Rui (2006) stated

that a company's questionable or illegal activities may be discussed by the board during a few meetings when the management tended to prepare fraudulent reports, thus they suggested that more board meetings were positively associated with fraud.

The research on the effect of the number of board meetings on earnings quality and firm value showed mixed results. By adopting 282 firm-year observations in the US, Xie et al. (2003) revealed that when boards met more often, the level of the magnitude of earnings management was lower, indicating that an active board may be able to monitor better than an inactive board. Accordingly, Brick and Chidambaran (2010) found that the frequency of board meetings was positively associated with firm value with a sample of 5,228 firm-year observations from EXECUCOMP. However, Ebrahim (2007) found that there was a positive association between the number of board meetings and earnings management using a sample including all manufacturing firms listed in COMPUSTAT. Jackling and Johl (2009) showed that the number of board meetings was unrelated to firm performance using a sample of top Indian companies.

The Company Law in China regulates companies to hold board meetings at least twice every year. Overall, the empirical studies on the effect of board meetings also produced inconclusive results based on Chinese companies. Consistent with Conger et al. (1998), Hu et al. (2010) found that board meetings were positively related to firm performance among a sample of Chinese companies. Tang and Xu (2007) and Yang et al. (2008) documented that more frequent board meetings reduced earnings management in Chinese companies. In contrast, Shen and Zhang (2002) showed that ST companies held more board meetings than non-ST companies. Their findings are supported by Chen et al. (2006) which compared fraud and non-fraud Chinese companies and showed that the former had more board meetings. Cho and Rui (2009), however, found non-significant correlations between board meetings and firm performance. In summary, based on previous research, this study attempts to investigate whether board meetings are effective in monitoring financial reporting quality and performance in Chinese companies.

2.5.4 CEO duality

CEO-duality is another problem for boards of directors in China. CEO duality means that a company's CEO is also a chairman of the board. Two theories, agency theory and stewardship theory, argue two opposite views about the effect of CEO duality. According to agency theory, CEO and chairman roles should be separated because the boards are responsible for monitoring the management including CEO. Following agency theory, Jensen (1993) stated that CEO could not perform the chairman's role since the chairman was responsible for operating board meetings and to supervise the process of employing, dismissing, evaluating, and compensating the CEO. It is more difficult for the boards to perform this critical function if there is no independent leader. The stewardship theory, however, claims that the dual roles improve efficiency since there is no information breakdown between CEO and the board (Donaldson & Davis, 1991). Supporting stewardship theory, Brickley, Coles and Jarrell (1997) claimed that CEO duality did not necessarily depart from the principle of separation of decision management and control. In their view, both forms of leadership have potential costs and benefits. However, their empirical research indicated that costs of separation exceeded the benefits for most large companies.

The UK embraces the idea of separation and views it as an important component of board independence. In UK, about 95 percent of all FTSE 350 companies follow the principle that different people should have each of these roles (Coombes & Wong, 2004). In US, there is no corporate governance code that recommends companies to separate the roles of CEO and chairman. In Australia, a majority of companies also have a chairman who is independent of the CEO (Donaldon & Davis, 1991). In contrast to the situation in UK, around 80 percent of S&P 500 companies combine the two roles (Coombes & Wong, 2004). CSRC (2001) encouraged the separation of the CEO and chairman roles in Chinese companies, and indicated that if a person performed dual roles, then at least half of directors should be independent (Wei, 2007). Wei (2007) argued that CEO duality would be detrimental to the monitoring ability of board of directors and would impair board independence.

According to the literature, the effect of CEO duality on financial reporting quality and performance remains unclear. Some researchers argued against dual roles and found support

for the negative impact of CEO-duality on firm performance (Rechner & Dalton, 1991; Jensen, 1993; Daily & Dalton, 1994). Klein (2002) found that CEO also holding a position on the executive compensation committee was associated with more earnings management. Similarly, Krishnan and Visvanathan (2008) showed the separation of CEO and chairman of the board was associated with more conservatism. However, researchers including Daily and Dalton (1997), Chaganti, Mahajan and Sharma (1985), Rechner and Dalton (1989), and Baliga, Moyer and Rao (1996) found CEO duality had little impact on firm performance. Yunos et al. (2012) indicated that the separation of the CEO and chairman roles did not lead to more conservatism in the Malaysian context because the controlling shareholders can influence the effectiveness of board of directors and the board independence could not be improved through the separate structure. The results of studies conducted by Donaldson and Davis (1991) and Coles et al. (2001) supported stewardship theory and indicated that CEO duality was positively associated with firm performance.

In the Chinese context, the results of empirical studies on impact of CEO duality are also inconclusive. The results of Tian and Lau (2001) supported stewardship theory and showed that companies with better performance had a CEO-chairman leader, based on a sample of companies that went public in 1996 at China's two stock exchanges. Their findings are supported by Peng, Zhang and Li (2007) which also offered stronger support for stewardship theory covering 403 publicly listed firms in China. In contrast, Bai, Liu, Lu, Song and Zhang (2004) showed that having CEO as chairman was negatively associated with market valuation of Chinese companies. Hwang, Long and Wang (2010) found that CEO duality had significantly positive impact on earnings management for all Chinese listed companies. However, Wang and Deng (2006) showed that there was no significant relationship between CEO duality and financial distress in China. Wu, Bo and Xi (1998) also found that CEO duality was not associated with firm performance based on a sample of 188 Chinese companies. Moreover, Huang and Liang (2007) indicated that CEO duality was not related to the emergence of fraud using 39 matched fraud and non-fraud companies listed on the two exchanges. Palmon and Wald (2002) argued that firm size should be considered when examining the relationship between leadership structure and firm performance. They indicated that absence of firm size as an explanatory variable may be the reason for the

inconsistent results. The results of their study showed that small firms benefited more from CEO duality while large firms benefited more from the separation of the two roles.

2.5.5 Top management Turnover

Top management may be forced to or may voluntarily resign from the company. Forced turnover is usually associated with unsatisfactory firm performance while voluntary turnover occurs through non-performance-related events, including retirement, death, working for a new company or joining the government service (Comte & Mihal, 1990). Forced turnover is also an indication of effectiveness of board of directors because an important function of the board is to identify and replace low quality management (Weisbach, 1988). Some research supported this view by showing that top management turnover was associated with poor performance (Weisbach, 1988; Warner, Watts & Wruck, 1988; Conyon, 1998; Dahya, Lonie & Power, 1998). Moreover, Denis and Denis (1995) showed that forced resignation of top management was followed by better firm performance.

Top management turnover is the topic of much recent research in developed markets. The research has investigated changes of CEOs, chairmen, and company presidents (Firth, Fung and Rui, 2006). The research on top management turnover is much less in transitional economy. Previous research indicated that newly appointed top management was more likely to reduce reported earnings in their first years of change than companies that did not change management. For instance, in the US, Pourciau (1993) examined the relationship between earnings management and non-routine executive changes. The results indicated that newly appointed executives decreased reported earnings through accruals management in the year of the executive change and increased reported earnings in the following year. Similarly, in Australia, Godfrey, Mather and Ramsay (2003) showed that new CEOs engaged in downward earnings management in the year of change and engaged in upward earnings management in the year after. As a new top management appointed under disappointing performance, he/she may be under pressure or motivated to take an "earnings bath"[3] in the

[3] Managers under-report earnings by a large amount for sufficiently bad earnings news, a behaviour known as taking a earnings bath or a big bath (Kirschenheiter and Melumad, 2002). Peasnell et al. (2005) argued that

first year of service. By taking an earnings bath in the year of change and managing earnings upward in the following year, the new appointed top management can show that he/she is able to do a better job than the former (Godfrey et al., 2003).

The Company Law of China promulgated in 1993 specified that the general shareholders' meeting had the ultimate authority to make decisions relating to appointment and dismissal of top management (Firth et al., 2006). The Code of Corporate Governance for Listed Firms in China provides the duties and responsibilities of shareholders and directors in greater detail. It states that the controlling shareholders can make recommendations on the appointment, reappointment and termination of top management to the board of directors. According to the recommendations from the controlling shareholders, directors nominate their choice in the shareholders' meeting, which then votes on the issue (Firth et al., 2006). From the rules of the Company Law and the Code, it can be seen that the controlling shareholders play an important role in the appointment and termination of top management. The management should be selected based on ability and thus the Company Law states that shareholders should not dismiss top management before the end of his/her contract date unless there is just cause. The rule is set to avoid the controlling shareholders removing management because of political favour.

The research on top management turnover is limited in China. Firth et al. (2006) is the first study to investigate top management turnover in China and confirmed that profitability was an important factor in chairman turnover in Chinese listed companies. Shen and Lin (2009) showed that firm profitability was negatively associated with top management turnover only when firm profitability was below target, measured by industry median. Hu and Leung (2012) found top management turnover was also negatively related to the performance of listed SOE from 2001 to 2005, suggesting the existence of effective corporate governance in companies controlled by the government.

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management may take an earnings bath to decrease reporting income when pre-managed earnings fall well below the threshold.

2.6 Board of supervisors

In contrast to companies in the US and the UK, China has adopted a two-tier board structure which consists of a board of directors and a supervisory board. The Company Law in China requires companies to have a supervisory board with the duty to oversee the board of directors. The members of the supervisory board usually include:

- representatives from the central of local government, and in most cases they have to be members of the Chinese Communist Party
- executives from the parent companies
- labour union representatives (Lin, 2011, p.33)

The responsibilities of the supervisory board include:

- financial review
- monitoring directors and managers to ensure their compliance with law, regulations, and Articles of Incorporation
- requesting directors and managers to rectify any of their actions if these are in conflict with the company's objectives
- proposing shareholder meetings whenever they believe them to be necessary
- fulfilling any other duties that are stipulated in the articles of association for the firm
- attending the meetings of the board of directors
- submitting a supervisory board report in the shareholders' annual general meeting (Xiao, Dahya & Lin, 2004).

The supervisors can report to regulatory authorities directly if they find any actions not in conformity to laws, accounting standards, regulations or the company's charter (Firth, et al., 2007). The direct approach to the regulator can constrain the misbehaviour of the managers and dominant shareholders. In addition, supervisors should have professional knowledge relating to accounting, finance and law, and they should be able to perform their duties independently and efficiently (Li et al., 2008). However, in reality, the supervisory board did

not perform the duties fully and played an unimportant role in Chinese companies (Tian, 2001).

Although Germany and Japan also adopt two-tier board system, Chinese supervisory board differs from German system. Unlike supervisors in German supervisory boards, Chinese supervisors do not have the power to appoint and dismiss directors and executives. Chinese supervisory boards are required to have at least three members, and employee representatives must occupy a third of the members (Liang & Useem, 2009). In Germany, many employee representatives are officers of workers' councils from other companies, while employee representatives in Chinese companies are exclusively from within the company.

Previous research indicated that supervisory boards of Chinese companies only maintained a physical presence and were appointed to comply with legal requirements. Supervisory board sometimes provided consultancy expertise and advice to the board of directors in board meetings. However, supervisors did not argue with the board of directors when conflicts arise. Therefore, supervisory boards were considered as "rubber stamps" and a majority of research on corporate governance in China focused on the board of directors rather than supervisory board.

Recently, Chinese government has announced a few rules to improve the effectiveness of supervisory boards. In 2002, CSRC issued the "Code of corporate governance for listed companies in China" which requires the appointment of supervisors with professional knowledge or working experience to supervisory boards (Shan & McIver, 2011). The Code in 2002 also has increased the power of the supervisory board by allowing it to appoint the external auditor or to employ independent professional institutions to assist its monitoring duty. Moreover, supervisory boards now have the power to propose termination of unsatisfactory directors and top management and to sue them if they commit frauds (Ding, Wu, Li & Jia, 2010). Supervisory boards' right to monitor top management and directors was also expanded. Before 2006, other top managers, such as CFO, vice president and secretary of board of directors were out of the monitoring scope of supervisory board (Ding et al., 2010). The expansion improves supervisory boards' monitoring scope. Although a set of regulations have been issued to increase the power of supervisory board, their enforcement in

practice is unknown. Therefore, this study also investigates the effectiveness of the supervisory board using more recent data.

2.6.1 Independence of supervisory board

A supervisory board is considered as independent when it can perform its monitoring duties 'largely' independently of any interference from the board of directors and controlling shareholders (Xiao et al., 2004). Although in theory it should be supervisory and independent, the board of supervisors in Chinese companies is often criticised for serving a "symbolic rather than practical function" (Tsui, 2010). The two-tier system originates from Germany; however, in contrast to the German model, members of the supervisory board in Chinese companies are appointed by the board of directors (Shan & McIver, 2011). As a result, most supervisors are considered as insiders rather than outsiders. They either work for the firm directly or have close connection with it, and thus lack independence (Shan & McIver, 2011). In addition, although the law regulates that the employee supervisors should be appointed in the shareholders' meetings and democratically elected by the employees, no explicit regulation is given concerning employees' rights on nominating and approving the candidates (Lee, 2012). Due to the strong cultural influence of Confucianism, employees have a tendency to be submissive to their employers and thus the board of directors nominates the candidates in reality. Moreover, because supervisors in China have no significant power to take action against the board of directors, Tsui (2010) argued that they could not perform the monitoring duty effectively and could be regarded as merely rubber-stamping the decisions of the board of directors.

In comparison to research on Anglo-American one-tier system, fewer studies have investigated the two-tier system. The results of previous studies showed positive effects of independence of supervisory boards. Hermawan and Adinda (2012) found a significant negative relationship between the independence of members of supervisory board and discretionary accruals in Indonesia. Similarly, the results of Greco's (2012) study showed that the proportion of independent supervisors was negatively associated with the magnitude of earnings management of companies in the European oil industry. Velte (2010)

demonstrated that the independence of supervisory board was positively associated with firm performance both in Germany and Austria.

Because of the dominance of directors and senior managers, some empirical research indicated that the supervisory boards in Chinese companies were not effective. Hu et al. (2010) examined 1271 Chinese companies listed on the two stock exchanges in 2003 to investigate internal governance mechanisms and corporate performance. Their results showed no significant association between the percentage of outside supervisors on the supervisory board and corporate performance. Cho and Rui (2009) also demonstrated a non-significant relationship between the proportion of independent supervisory board members and performance of listed Chinese companies from 1999 to 2003. However, they found that independence of supervisory board was positively associated with earnings informativeness. Shan and McIver (2011) employing a sample of listed Chinese companies from 2001 to 2005, reported that the proportion of independent supervisors was negatively related to firm performance. However, in more recent research, Wang (2013) found that the independence of a supervisory board increased the shareholder value in Chinese companies from the year 2000 to 2009.

In summary, the results on the effectiveness of independent supervisors are inconclusive for Chinese companies. This study will investigate whether the independence of supervisory board improves earnings quality and firm performance in recent years.

2.6.2 Supervisory board size

In contrast to the one-tier governance system, board size is regulated both for the board of directors and the supervisory board in China. A supervisory board should not have less than three members. Board size is likely to be related to board performance, because knowledge base is influenced by size (Karamanou & Vafeas, 2005). On one hand, Firth et al. (2007) argued that a larger supervisory board had greater professional knowledge in financial accounting and could apply more pressure on the company to provide high quality financial reporting. For instance, when a CEO wants to adopt fraudulent accounting, a large supervisory board may be more effective in obstructing the CEO (Firth et al., 2007). Their

results showed that larger supervisory boards resulted in higher quality financial statements. On the other hand, small supervisory boards spend less time on internal coordination, and thus they can take action more easily and reduce costs (Xia & Zhao, 2009). In other words, smaller supervisory board is able to work with high efficiency and effectively.

In Germany, Bremert and Schulten (2009) claimed that supervisory board size did not significantly influence firm performance. Berming and Frick (2010) did not find a consistent influence of supervisory board size on firm performance when they used different performance measurements on German companies. In terms of the effect of supervisory board on earnings quality, Hermawan and Adinda (2012) indicated that the number of members of supervisory board was not associated with the discretionary accruals in state-owned enterprises of the Republic of Indonesia.

In China, consistent with Firth et al. (2007), Cho and Rui (2009) indicated a positive impact of the size of the supervisory board on earnings informativeness measured by the earnings-return relationship. Moreover, Liao, Young and Sun (2009) showed that the number of members of supervisory board was negatively related to expropriation. This indicated that companies with larger supervisory board engaged in fewer related party transactions. Conversely, using a sample of 1325 Chinese listed companies from the year of 2000 to 2009, Wang (2013) found an inverse association between supervisory board size and firm valuation measured by Tobin's Q and return on assets (ROA). This may be because smaller supervisory boards do not have problem in internal coordination, thus reducing costs. Shan and Xu (2012), however, showed that the number of members of supervisory board was not significantly associated with firm performance. Su and He (2012) also demonstrated that the size of supervisory board had no significant effect on firm efficiency.

2.6.3 Supervisory board meetings

It is documented that board activities affect the effectiveness of its functions and the number of board meetings is usually considered as a proxy of the boards' oversight activities (Jia et al., 2009). The German legislation specifies a minimum of two supervisory board meetings within 6 months while the Corporate Law in China stipulates Chinese listed companies to

have at least one supervisory board meeting every 6 months, that is, a minimum of two meetings every year. If needed, companies in China can have more than two meetings to discuss various issues (Ding et al., 2010). Supervisors can attend meetings of board of directors as well, but they are not empowered to vote at board meetings.

According to Bremert and Schulten (2009), the number of supervisory board meetings is a 'rough' proxy for board diligence. Diligent supervisors should be able to consult with management better and influence management decisions more effectively (Bremert & Schulten, 2009). In addition, Jia et al. (2009) argued that having more supervisory board meetings may lead to a higher level of oversight, and therefore improve boards' monitoring function. This view is supported by Cho and Rui (2009) who found that having more supervisory board meetings were positively associated with firm performance. Firth et al. (2007) also suggested that more frequent meetings were helpful for improving the quality of accounting information in China. At the same time, however, there is an adverse view relating to the frequency of supervisory boards. More frequent supervisory board meetings may not be for oversight; instead, the meetings may be held because of abnormal or illegal activities (Jia et al., 2009). For instance, adopting a sample with 362 Chinese companies of fraud and a comparative matching sample of 327 companies without fraudulent activities, Jia et al. (2009) found that supervisory board met more frequently when their companies suffered fraud and were more likely to face severely penalties. Ding et al. (2010) also argued that board monitoring was costly and holding too many meetings in a year may result in lower efficiency and lower effectiveness of corporate governance mechanism. Bremert and Schulten (2009) however, failed to find a significant relationship between supervisory board meetings and corporate performance based on a sample of all listed German companies that went public in 2007.

2.6.4 Supervisory board qualifications

According to Dahya, Karbhari and Xiao (2002), the supervisory board is responsible for performing a financial review, monitoring the behaviour of directors and executives and detecting anomalies in a company's financial performance. Since these responsibilities are technical in nature, it is essential to appoint those with technical expertise in accounting,

finance, law and other relevant areas (Dahya et al., 2002). In addition, Bremert and Schulten (2009) pointed out that supervisory boards had various duties, therefore the appointment of supervisors with professional knowledge or work experience was necessary to be able to understand the complex situations a company may face. If the supervisory board lacks such expertise, it could be misled and may not be able to undertake its duties effectively (Dahya et al., 2002). The Code issued by CSRC in 2002 gave particular attention to the qualifications and professional knowledge of supervisors, as a prerequisite for monitoring financial and managerial performance effectively (Shan & McIver, 2011). Although the Code has discussed the need for supervisors to have relevant professional knowledge or work experience, it is not a mandatory requirement. Therefore, it cannot guarantee that supervisory boards in China include supervisors with expertise (Lee, 2012). This study investigates whether companies follow the Code to appoint members with expertise and examines the effectiveness of these professional supervisors.

Velte (2010) showed the importance of having financial expertise on the supervisory board because this was positively associated with firm performance for German companies. Bremert and Schulten (2009) revealed ambiguous results for the effects of supervisory board expertise on corporate performance, adopting return on assets (ROA) and Tobin's *Q* as measurements of firm performance. The results showed that supervisory board expertise did not significantly affect ROA while it was negatively associated with Tobin's *Q*. This finding contrasts with the beneficial performance effect of appointing expert and experienced supervisors. However, they pointed out that the reason may be because the board included busy external supervisors who could be distracted from fulfilling their monitoring function properly. Chen et al. (2007) indicated that supervisory boards with financial expertise were less likely to engage in earnings management in Taiwanese listed companies. In the Chinese context, Shan and McIver (2011) found that the expertise of the supervisory board was not significantly associated with firm performance.

2.7 Ownership structure

2.7.1 Types of shares

The type of ownership structure strongly influences the corporate governance system (Shan & McIver, 2011). In China, the state controls most listed firms and holds much of the stock (Xia & Zhu, 2009). Ownership is defined by Tam and Tan (2007) as the amount of equity shares an ultimate owner holds in a listed firm. An ultimate owner is "the shareholder who has the determining control rights of the company" (Fan & Wong, 2002, p. 410). The company is defined as widely held company if it does not have an ultimate owner (Fan & Wong, 2002).

Most Chinese listed companies have three groups of shareholders: the state, the legal person and individual investors, with each group having similar amounts of shares (Wei, 2007). The former two shares were non-tradable before 2005 and shares held by individual investors are publicly tradable in the two stock exchanges. State shares are "those held by the central government, local government or solely-government-owned enterprises". Legal person shares are "shares held by domestic institutions which are either independent from or partially owned by the central or local government" (Delios, Zhou & Wu, 2008). The state is able to control a public Chinese company through two types of shares: state shares and state-owned legal person shares. Under the above official classifications, these two types of shares are categorised as the state shares and legal person shares. As a result, one type of legal person shares- state-owned legal person shares- is actually state shares.

2.7.2 Ownership concentration

Due to government restrictions, state and legal person shares were not tradable on the stock market before 2005 (Xu & Lu, 2008). On 29 April 2005, the Chinese authorities announced that non-tradable shares would be gradually converted into tradable shares in all domestically listed companies (Li et al., 2008). Although state and legal person shares can be technically traded after 2005, the quantity is restricted (Li et al., 2008). Therefore, only around 35% of total shares are freely tradable, resulting in high state ownership concentration (Kung et al., 2010). Moreover, the key industries in China, such as oil, natural gas, mining, banking and insurance companies, are still controlled by the state (Yu, 2013). Compared with most emerging economies which also feature high ownership concentration, China is different from them because of the absence of significant ownership controlled by individuals and

families, the insignificant role of financial institutions, but the important role of the state (Qiang, 2003). Class A shares are only issued for Chinese citizens while Class B shares are issued both for Chinese investors and foreign investors (Lin, 2011). Table 2.1 shows the share classification.

Table 2.1 Share Classification

Type of shares	Listing places	Investors	Trading currency
A share	Shanghai or Shenzhen	Chinese citizens, excluding Hong Kong and Taiwan citizens	RMB
B share	Shanghai or Shenzhen	Chinese citizens and non-Chinese citizens	Hong Kong dollar or US dollar
H share	Hong Kong	Chinese citizens and non-Chinese citizens	Hong Kong dollar

High ownership concentration is common in East Asia and several researchers claimed that it was beneficial for corporate governance in China. First, it can minimize the traditional agency problem between managers and shareholders (Wu, 2011). A large share of equity improves the effectiveness of shareholders in monitoring management, preventing management from making decisions for their own interests (Shan & McIver, 2011). Second, ownership concentration facilitates more efficient and rapid decision making (Carney, 2005). Finally, owners with highly concentrated shares are more likely to actively monitor their investments (Gaur, 2007).

Although there are several benefits of high ownership concentration, it also causes a few serious problems. In China, the one share one vote rule is required by CSRC, thus the largest shareholders of Chinese listed companies have relatively large control rights for their companies (Li et al., 2009). As ownership becomes dominant, large owners acquire the power to generate private benefits by expropriating company wealth from minority shareholders (Shleifer & Vishny, 1997). The agency problem is therefore transformed from a

conflict between managers and shareholders to one between controlling and minority shareholders (Ding et al., 2007). This has breached the element of the OECD principle of equitable treatment of shareholders. Moreover, it is widely documented that weak legal protection for minority shareholders is also a contributor to the agency problem in China (Qiu, 2006). Extensive research has reported that expropriation of minority shareholder interest is predominant in Chinese listed companies. Controlling shareholders primarily seek private benefits and exploit minority shareholders through related party transactions, mainly through the credit facilities, purchases and sales and loan guarantees (Qiu, 2006).

(1) Credit Facilities

A major concern of expropriation by controlling shareholders is the interest-free borrowing by controlling shareholders from companies. It is perceived that controlling shareholders regard companies as their cashier and they can obtain cash as long as they wish (Qiu, 2006). Qiu's (2006) research indicated that in 2002, controlling shareholders borrowed RMB 9 billion from listed companies, accounting for 40% of the total amount of cash borrowed from listed companies.

(2)Purchases and Sales

Selling and purchasing products, materials and fixed assets between listed companies and their controlling shareholders at non arms' length prices is the predominant form of related party transactions. The sales and purchases involve either listed companies selling goods and materials to their controlling shareholders at below market prices or the purchasing goods and materials from the controlling shareholders at above-market prices (Qiu, 2006).

(3) Loan Guarantees

Listed companies giving guarantees for loans granted to their controlling shareholders is another form of expropriation of minority shareholders' interest. Qiu (2006) demonstrated that the total amount of guarantees given either by dominant shareholders for Chinese listed companies or by listed companies for dominant shareholders was RBM 9.8 billion in 2002.

Korczak & Korczak (2009) stated that the controlling shareholders concealed these self-interested activities to avoid disciplinary action by the manipulation of financial disclosure. When the controlling shareholders effectively control companies, they also control companies' accounting information and reporting policies (Fan & Wong, 2002).

A pyramid ownership is also common in East Asian countries and it is defined as "owning a majority of the stock of one corporation which in turn holds a majority of the stock of another, a process that can be repeated a number of times" (Claessens, Djankov & Lang, 2000). Ultimate shareholders who have few cash flow rights are able to control companies through the pyramid structure, particularly in undeveloped countries with an ineffective legal system (Xia & Zhu, 2009). Because pyramid ownership structure is typical in East Asian companies, some controlling shareholders actually have more control than they ought to have, based on equity ownership (Fan & Wong, 2002).

2.7.3 Prior studies on ownership, earnings quality and firm performance

Numerous studies have explored the influence of the ownership structure on firm performance within Western capital market. According to agency theory (Jensen & Meckling, 1976), when the owners appoint managers to operate companies on their behalf, a conflict of interest may arise between owners and their managers (Gunasekarage, Hess & Hu, 2007). Managerial ownership is regarded as a mechanism that can mitigate this conflict. If true, managerial ownership will be good for constraining earnings management and improving firm performance; however, empirical studies have not always supported this expectation.

Warfield et al. (1995) asserted that managerial ownership was positively related to earnings informativeness. They also found that the magnitude of discretionary accounting accrual adjustments was much higher for lower managerial ownership. However, Rajgopal, Venkatachalam and Jiambalvo (1999) showed non-significant relationship between discretionary accruals and managerial ownership. Both studies used US companies as samples, and the inconsistent results may arise because Warfield et al. (1995) used the five-year average of prior period accruals to measure non-discretionary accruals while Rajgopal et

al. (1999) used the modified Jones (1991) model. Demsetz and Lehn (1985) and Demsetz and Villalonga (2001) found no relationship between stock ownership structure and firm performance based on samples of 511 large US firms and 223 US firms respectively. Furthermore, Morck, Shleifer and Vishny (1988) reported a non-monotonic relationship between insider ownership and firm performance using data of 371 Fortune 500 firms. The results of their research indicated that Tobin's *Q*, used to measure corporate performance, increased as insider ownership increased from 0% to 5%, decreased as ownership rose further to 25%, and then continued to rise as ownership increased beyond 25%. Holderness and Sheehan (1988) investigated the corporate performance of 101 firms with corporate majority shareholders matched with 101 diffusely held US firms. They found that the corporate performance of the two groups of companies was similar. Lafond and Roychowdhury (2008) examined the effect of managerial ownership on financial reporting conservatism. They showed that low managerial ownership resulted in more incentives for managers to overstate current earnings and thus shareholders would demand more conservatism.

Although the empirical studies based on Western capital market are suggestive of the potential importance of ownership concentration in China, the ownership structure of Chinese companies differs from that of companies in Western capital markets (Shan & McIver, 2011). In China, manager shareholdings of listed companies are very small and incentives for managers to improve firm performance are weak. Before 1978 when the economic reform began, no managers were allowed a share of profits produced by the stated-owned companies because they were government officers appointed by the state. Subsequently, economic reforms, aimed at fostering a market oriented approach, allowed corporatisation, and listing of stocks on two exchanges (Wei, 2007). Western compensation arrangements which allow managers to acquire stock in their firms have also been introduced to China (Wei, 2007). However, in practice Xia and Zhu (2009) found that management ownership was trivial (0.03%) in China and the compensation to managers continued to be fixed rather than performance related. Although there are several forms of ownership in Chinese companies, the state is still the major shareholder of listed companies, which results in a highly concentrated ownership structure. In contrast to the privatization process of other transition economies, such as Poland, Russia and the Czech Republic, in China it has been a gradual

process, resulting in partial privatization. China's unique ownership structure highlights the importance of studying the impacts of ownership concentration and state ownership.

According to Xiong, Li and Wang (2008), an increase in ownership concentration has two effects on corporate performance. On the one hand, the shared income of large shareholders and their control power will increase, thus creating an incentive to monitor management's commitment to better corporate performance (Xiong, et al., 2008). On the other hand, as the control power of large shareholders increases, it becomes more difficult for other shareholders to undertake this role. The large shareholders thus can easily expropriate other shareholders' income for their own private interests. This will decrease the credibility of a firm's accounting information and financial performance.

Research which examined the effect of ownership structure on performance of Chinese companies produced mixed results. Shan and McIver (2011) and Hu et al. (2010) argued that ownership concentration in general was an important factor in determining firm performance. They found that high level of ownership concentration had a negative effect on performance of Chinese listed companies. The negative impact may arise from the expropriation from minority by majority shareholders. Similarly, Bai, et al. (2004) showed that large shareholdings held by the largest shareholders and the largest shareholder being the government have negative effect on firm performance. However, Chen and Xu (2001), who investigated all non-financial Chinese listed companies from 1996 to 1999, found that the presence of controlling shareholders resulted in an increase in firm performance. The results of their research supported Singh and Gaur (2009) who demonstrated that ownership concentration in China was positively correlated with firm performance. The positive relationship may be because some corporate governance specific reforms have been issued to reduce the negative effect of ownership concentration.

Previous research indicated that stakeholders' economic and political interests provided important signals about the level of accounting conservatism that should be supplied to meet the demand (Kung et al., 2010). With the increase of their control rights, controlling shareholders will ignore minority shareholders' demands and place more reliance on private forms of communication. Therefore, the demand for conservatism will be lower in China.

Furthermore, controlling shareholders can expropriate wealth from minority shareholders and easily manipulate earnings, which also decrease the level of conservatism (Xia & Zhu, 2009). Thus, researchers posit that high ownership concentration or a lower proportion of outside shareholder interests discouraged a higher level of conservatism. Kung et al. (2010) demonstrated that conservatism was inversely related to higher levels of non-tradable shares. Similarly, Xia and Zhu (2009) identified that the controlling rights of ultimate shareholders were negatively associated with the degree of the conservatism in financial reporting. Wu (2011) and Cullinan et al., (2012) also showed that the percentage of the largest shareholder ownership was negatively related to accounting conservatism. Ding et al. (2007) however revealed that a U-shape relationship existed between ownership concentration and earnings management across 273 privately owned and stated owned Chinese companies listed on the two exchanges in 2002. They also found that ownership concentration would result in more earnings maximization in state-owned companies than privately-owned companies.

Chen, Chen, Lobo and Wang (2010) indicated that since government will ultimately cover all the losses, state owned commercial banks often lend to state owned companies even when these companies are performing poorly. Conversely, because the banks lend to non-state owned companies for profitability purposes, the banks will approach such companies on a competitive basis and hence investigate the contents and credibility of accounting information in companies' financial statements (Chen et al., 2010). Therefore state owned companies are expected to employ less conservatism because lenders are less concerned with downside risk for them (Chen et al., 2010). Furthermore, state owned companies may boost earnings to conceal the expropriation of funds for financing IPO requirements and to achieve a higher IPO price (Ding et al., 2007). Therefore, when state ownership is more concentrated, the conflict between the state and minority shareholders is greater and the incentives for income increasing earnings management are stronger. Although China has undergone a privatization reform since the 1970s, state-owned-shares are still the main kind of shares. Research on the influences of state ownership on conservatism provided mixed evidence. For instance, consisting of all Chinese listed companies from 2001-2006, Chen et al. (2010) found that state-owned enterprises in China adopted less conservatism than non-state-owned enterprises. Consistent with Chen et al. (2010), adopting a sample of Chinese companies from 200-2004, Zhu and Li (2008) found a negative relationship between state ownership and

conservatism, due to insider control problem and government intervention. In contrast, Cullinan et al. (2012) indicated that the level of conservatism was not different between state-related and non-state-related companies, using Chinese companies as a sample with more recent period (2007-2009).

Clarke (2006) argued that the state also pursues macro-economic and social objectives rather than necessarily focusing on the profit–maximizing goal. Therefore, most empirical studies based on Chinese listed companies indicated that the proportion of state-owned shares was negatively related to firm performance (Xu & Wang, 1999; Qi, Wu & Zhang, 2000; Sun & Tong, 2003; Wang, 2003; Gunasekarage et al., 2007; Wei et al., 2005). Conversely, Tian (2001) and Yu (2013) found that state shareholdings were not always related to poor firm performance. They found a U-shaped relationship between state shareholdings and firm value measured by Tobin's Q and return on assets (ROA). When the state is a small shareholder, corporate value decreased with the increase in state shareholdings. However, when the state shareholdings are sufficiently large, corporate value increased with the increase in state shareholdings. He argued that the U-shape was caused by the behaviour of state shareholders. State shareholders have political and financial goals. When state shareholdings are small, political goals overcome financial goals which induce a lower firm value for a larger other shareholding. However, when state's financial interests become adequately large, it will provide helping hands, resulting in higher firm value (Tian, 2001). Using Tobin's Q to measure firm performance, Sun, Tong and Tong (2002) also found a U-shaped relationship between the two variables but it was inverted. Using a sample of 276 China-listed companies from 1999 to 2002, Wei (2007) found that their relationship was non-linear, but not U-shaped or inversely U-shaped. His results showed that when the proportion of state-owned shares was small, there was no significant relationship between shareholdings and corporate performance. However, when the proportion was above 50 percent, state-owned shareholdings had significant adverse effects on corporate performance, showing that concentrated state ownership resulted in poor firm performance. The inconclusive empirical results may be because of different performance measurements and sample selection techniques (Yu, 2013).

In summary, since legal protection for minority shareholders is still ineffective, the agency problem between controlling shareholders and minority shareholders has not been solved in China; elevated levels of ownership concentration and state control will usually result in lower quality of financial reporting and poorer firm performance. In addition, ownership structure of Chinese companies is significantly different across industries so that potential industry influences of ownership on firm performance may exist (Wei et al, 2005). Most researchers controlled for industry effects when they examined the relationship between the two variables (Gunasekarage et al., 2007; Wei et al., 2005; Tian, 2001; Donaldson & Davis, 1991; Wei, 2007).

2.8 Moderating effects

A moderating relationship occurs when the relationship of two variables is influenced by another variable. As described above, mixed results were produced relating to the effect of corporate governance on financial reporting quality and firm performance. The differences in results may be attributed to the moderating effect of ownership structure. Using a sample of Korean companies, Cho and Kim (2007) found that ownership concentration negatively moderates the positive association between independent directors and firm profitability. Similarly, Kumar and Singh (2012) proposed a negative moderating effect of insider ownership on relationship between outsider directors and firm value. Lam and Lee (2012) who examined public companies in Hong Kong indicated that family ownership concentration had an adverse moderating effect on the relationship between board committees and firm performance. Consistent with Lam and Lee (2012), Ibrahim and Samad (2011) showed that family ownership negatively moderated the effect of the corporate governance mechanisms such as board size, independent directors and duality on firm performance in Malaysian companies.

Ownership concentration and dominant state ownership are unique characteristics of Chinese listed companies. Some research based on Chinese companies (Shan & McIver, 2011; Wei, 2007; Hu et al., 2010) argued that concentrated ownership and state ownership can limit corporate governance mechanisms from functioning effectively. This argument can be tested

by examining the moderating effect of ownership structure on the effectiveness of corporate governance on conservatism and firm performance. As described in section 2.7.3, concentrated ownership and state ownership may result in lower conservatism and performance. Therefore, ownership concentration and state ownership may negatively influence the positive effect of firms' governance on conservatism and performance. For instance, Lin (2011) considered the moderating effects of state ownership and found that state ownership had a moderating effect on the effectiveness of board monitoring on earnings management measured by abnormal accruals in China.

2.8.1 Corporate governance measure to test moderating effect

Previous research has employed various approaches to measure corporate governance. Some studies used a number of governance variables such as ownership structure, board characteristics or audit committee characteristics as proxies for overall good corporate governance. However, an increasing number of studies incorporated a summary of corporate governance provisions to include broad governance mechanisms. Many studies used the governance index developed by rating agencies. Klapper and Love (2004) used the governance rankings produced by Credit Lyonnais Securities Asia to examine the relationship between corporate governance and firm performance. Brown and Caylor (2006) created a firm-specific governance index for US companies from Institutional Shareholders Service (ISS) database. Using a unique dataset provided by ISS, Brown and Caylor (2009) incorporated 51 individual governance provisions and coded each of governance factors as either 1 or 0 depending on whether ISS considered the firms' governance to be minimally acceptable. Black, Jang and Kim (2006) constructed a Korean Corporate Governance Index (KCGI) based on a survey of corporate governance conducted by the Korean Stock Exchange. They extracted 123 variables from the survey questions and then classified these variables into four categories: shareholders' rights, board structure, board procedure and disclosure. The four elements were then equally weighted.

However, Khanchel (2007) argued that the criteria used to measure the quality of corporate governance provided by rating agencies had limited use in terms of business results. Alternatively, some studies computed their own indices to measure governance. For instance,

Garcı´a Lara et al. (2009) developed a measure of total governance that incorporated attributes of internal and external governance to build index of governance and categorised companies into strong and weak governance. Similarly, Narayanan and Burkart (2005) measured the quality of corporate governance by a composite governance variable that incorporated the level of antitakeover protection and some characteristics of board of directors where higher values of the composite governance variable represented stronger governance. Using the incidence of 24 governance rules, Gompers, Ishi and Metric (2003) which is the first study of firm-level corporate governance indices, constructed a corporate governance index for 1,500 US companies. García Lara et al. (2007) who examined the relationship between corporate governance and conservatism developed an aggregate index that included several characteristics of board of directors.

Bhagat, Bolton and Romano (2008) argued that using only one dimension of a firms' governance to examine the effectiveness of governance has limitations when governance mechanisms were numerous and interaction effects quite probably exist. An advantage of governance indices is the simplicity of employing one summary number to capture the multiple dimensionality of firms' governance. Although this aggregate measure of governance is the dominant approach to evaluate the quality of corporate governance in current studies, some researchers still consider specific board attributes to be the critical determinants of governance (Bhagat, et al., 2008). This is because previous studies on the effect of corporate governance on performance indicated that using governance indices was not always better than single governance variables in predicting firm performance. Moreover, Bhagat et al. (2008) stated that governance indices were not perfect and thus investors and policy makers should be cautious in drawing inferences relating to a firm's governance quality from its ranking on any particular governance measure.

In general, the measure to score the quality of governance is subjective and can be controversial (Khanchel, 2007). Governance-ranking studies were based on different governance standards and the selection of the standards introduced a subjective element. Moreover, the governance standards assessed depend on the regulation applicable in a certain country, thus it is difficult to draw a conclusion (Khanchel, 2007). Corporate governance

rating should be developed based on best practices or on the determinants of strong governance.

This thesis aims to examine whether ownership structure limits the effectiveness of internal corporate governance mechanisms. Following previous studies (Khanchel, 2007; García Lara et al. 2007), this thesis adopts an aggregate measure of governance that incorporated the characteristics of the two boards to measure the quality of corporate governance.

2.9 U-shaped effect of corporate governance mechanisms

While the majority studies focused on linear effect of corporate governance mechanisms, some studies tested their non-linear effect on financial reporting quality and firm performance. As introduced in section 2.7.3, previous researchers found a U-shaped relationship between state ownership and firm performance. In addition to state ownership, other internal corporate governance mechanisms such as ownership concentration, board size and board meetings were also found to have U-shaped effect. For instance, Andres and Vallelado (2008) and Guest (2009) found an inverted U-shaped relationship between board size and performance. Tao and Hu (2012) showed that there was a U-shaped relationship between the frequency of board meetings and agency costs. Wang (2006) demonstrated an inverted U-shaped relationship between family ownership and earnings informativeness.

Based on previous literature, this thesis also tests the U-shaped effect of some corporate governance mechanisms in additional analyses.

2.10 Theoretical framework

2.10.1 Agency theory

Research on corporate governance primarily relies on agency theory (Abdullah, 2006), which emphasizes the relationship between principals (such as shareholders) and agents (such as corporate managers) (Deegan, 2009). An agency relationship arises when the agent is hired by the principal to perform a task and the agent would be involved in making decisions on

behalf of the principal in most cases (Subramaniam, 2006). Jensen and Meckling (1976, p. 308) defined an agency relationship as "a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent". The key underlying assumption of agency theory is that the agent will not always make decisions that are best for the principal due to individualistic and opportunistic interests. This agency problem is inherent in any principal-agent situation and may be exacerbated by incomplete information and uncertainty (Subramaniam, 2006). To eliminate the agents' self-interested activities, the principals may monitor the agents' behaviour or provide incentives through employment contracts that can align the agents' interest with that of the principals (Subramaniam, 2006). However, these solutions rely on an effective governance context which is common in most developed markets but may not exist in emerging economies with weak governance (Dharwadkar, George & Brandes, 2000).

Application of agency theory in China

The agency conflict between managers and shareholders is a traditional conflict and is still common in developed markets. However, the separation of ownership and management is not obvious in China because of concentrated ownership (Lin et al., 2009). The majority of Chinese listed companies are owned by the state. The state has the right to intervene in the appointment of management and key members of the boards (Fan, Wong & Zhang, 2007). Therefore, the state, acting as the ultimate owner of Chinese companies, has its managerial authority in the companies (Lin, 2011).

Traditional agency theory based on the separation of management and ownership is not applicable in China. Instead, unique agency concerns relating to the expropriation of minority shareholders exist in Chinese companies (Dharwadkar et al., 2000). When majority shareholders fully control the company and legal investor protection is weak, expropriation of minority interest may occur. The traditional agency problem based on principal-agent relationship turns into a principal-principal relationship. As a result, solutions provided by agency theorists based on traditional agency conflict are not considered to be effective for this unique agency problem (Dharwadkar et al., 2000). Corporate governance mechanisms

need to be developed to reduce the conflicts between dominant shareholders and minority shareholders.

2.10.2 Resource dependency theory

Because of differences in governance structures between developed and developing countries, the resource dependency theory can be used in conjunction with agency theory to explain corporate governance and its effect on accounting conservatism in China. Resource dependency theory is prevalent in supporting the explanation of specific corporate governance phenomena in emerging countries (Mohammed et al., 2010). The theory argues that companies are dependent on resources, which provides opportunities for resource providers to gain control over the companies (Pfeffer & Salancik, 1978). In China, reliance on government as resource provider is very important, and thus companies' decision making, including financial reporting can be influenced by the government. With government influence, companies can easily gain access to resources because it is likely to be based on government directions (Mohammed et al., 2010). This competitive advantage reduces the need for these companies to provide high quality financial reporting. Moreover, companies with governmental influence are likely to adopt less accounting conservatism to fulfil political agenda. Based on the above argument, governmental influence is expected to be detrimental to the quality of financial reporting.

2.10.3 Positive accounting theory

Positive accounting theory seeks to explain and predict the usage of a particular accounting method in firms, but it does not say which method firms should use (Watts & Zimmerman, 1986).

The firm is considered as a '*nexus of contracts*' that reduces the agency costs generated by self-interested parties (Watts & Zimmerman, 1986). Contracts always rely on accounting numbers and agency costs vary with the procedures used to calculate the accounting numbers (Watts & Zimmerman, 1986). Managers can select procedures and thus positive accounting

theory argues that there is a possibility that managers who are rewarded based on their accounting profits are inclined to manipulate the relevant accounting numbers to increase the apparent performance, and hence improve their related rewards (Deegan, 2009). Thus, accounting choice mechanisms such as conservatism are required to prevent managers from adopting income-increasing accounting practices. Accounting conservatism constrains managers' opportunism to pay more to themselves and reduces agency conflicts relating to managerial decisions (Garcı´a Lara et al., 2009).

Positive accounting theory, which originated from western countries, also applies in China. As described before, management ownership is trivial in China and the compensation to managers continue to be fixed rather than performance related. Therefore, managers in Chinese listed companies are not motivated to increase reported earnings. However, due to the concentrated ownership, controlling shareholders have the power to influence the action of managers. To conceal their expropriation activities, controlling shareholders may influence managers to manage earnings to increase the apparent firm performance. Thus conservatism is also required in Chinese companies to prevent controlling shareholders from adopting income-increasing accounting policies.

2.11 Conclusion

In general, although the results of empirical studies are mixed, most studies showed that conservatism improved corporate governance and ultimately increased firm value. In addition, empirical studies indicate that well governed companies tended to employ more conservatism than poorly governed companies.

Conservatism benefits companies by reducing the agency problems, improving corporate governance and thus increasing firm values. However, in the Chinese economic context, controlling shareholders are close to managers and therefore rely more on private forms of communication rather than accounting information. This reduces demand for conservatism in China. Some empirical studies showed that the level of ownership concentration was negatively associated with conservatism in China. Debt is another factor that potentially can

influence the demand for conservatism. However, the effect of debt on conservatism is small in China because the Chinese bank sector is tightly controlled by the government. In terms of the measurement of conservatism, Basu's (1997) asymmetric timeliness conservatism, approach proposed by Ball and Skivakumar (2005) and Givoly and Hayn's (2000) accrual-based conservatism are often used by researchers and reviewed in this chapter.

Previous research has indicated that corporate governance is still weak in China, with problems of highly concentrated ownership and ineffective internal corporate governance mechanism. Following the German-Japanese model, the two-tier board system- board of directors and supervisory board- is adopted in China. The two boards are important internal corporate mechanisms to protect the interests of minority shareholders. Recently, Chinese government has announced a few rules to improve the effectiveness of the two boards. Stronger board of directors or supervisory board employing more conservatism indicates that companies with good corporate governance adopt higher conservatism. However, the effectiveness of the two boards is questionable because the controlling shareholders have the right to nominate candidates for directors of board and supervisors.

The ownership structure in China is reviewed in this chapter, with three main groups of shareholders: the state, the legal person and individual investors. Among the three groups of shareholders, the state is the main shareholder, controlling nearly 80% of China's listed companies. Although ownership concentration mitigates the agency conflict between managers and shareholders, it produces an agency problem between controlling shareholders and minority shareholders. Due to the effective control of dominant shareholders, they have incentives to expropriate wealth from minority shareholders, especially in countries with weak investor protection. The influences of ownership concentration and state ownership are tested by examining their moderating effect on the effectiveness of corporate governance.

Chapter Three: Research Framework and Hypotheses development

3.1 Introduction

The previous chapter has reviewed the literature relating to the relationship between corporate governance, conservatism and firm performance. The main aim of this chapter is to discuss the research framework of the study and propose hypotheses based on the literature review. There are twenty hypotheses relating to the effect of corporate governance on conservatism and firm performance. One hypothesis (H10) proposes the benefits of conservatism on firm performance. The final group of hypotheses (H11) tests the moderating effect of ownership structure on the effectiveness of corporate governance on conservatism and firm performance.

Section 3.2 explains the research framework of the study. Section 3.3 presents all hypotheses developed to examine the association between corporate governance mechanisms, conservatism and firm performance. Finally, section 3.4 provides a summary of this chapter.

3.2 Research framework

A majority of Chinese companies are controlled by dominant shareholders and they have incentives to manage earnings upward in order to conceal expropriation of wealth from minority shareholders (Ding et al., 2007). Positive accounting theory suggests the use of conservatism as one way to control earnings management and reduce agency conflict. Conservative accounting thus is perceived to have benefits on corporate governance and subsequently increase firm value. Due to the benefits of conservatism, companies with stronger governance will adopt more conservatism. This proposed study examines the effect of corporate governance on conservatism as well as firm performance in a Chinese economic context. Specifically, corporate governance variables examined include characteristics of the board of directors and characteristics of the supervisory board. Moreover, the effect of

conservatism on firm performance is also examined. Due to the timelier recognition of negative net present value (NPV) projects, conservatism is expected to result in better firm performance. Figure 3.1 demonstrates the research framework of this study.

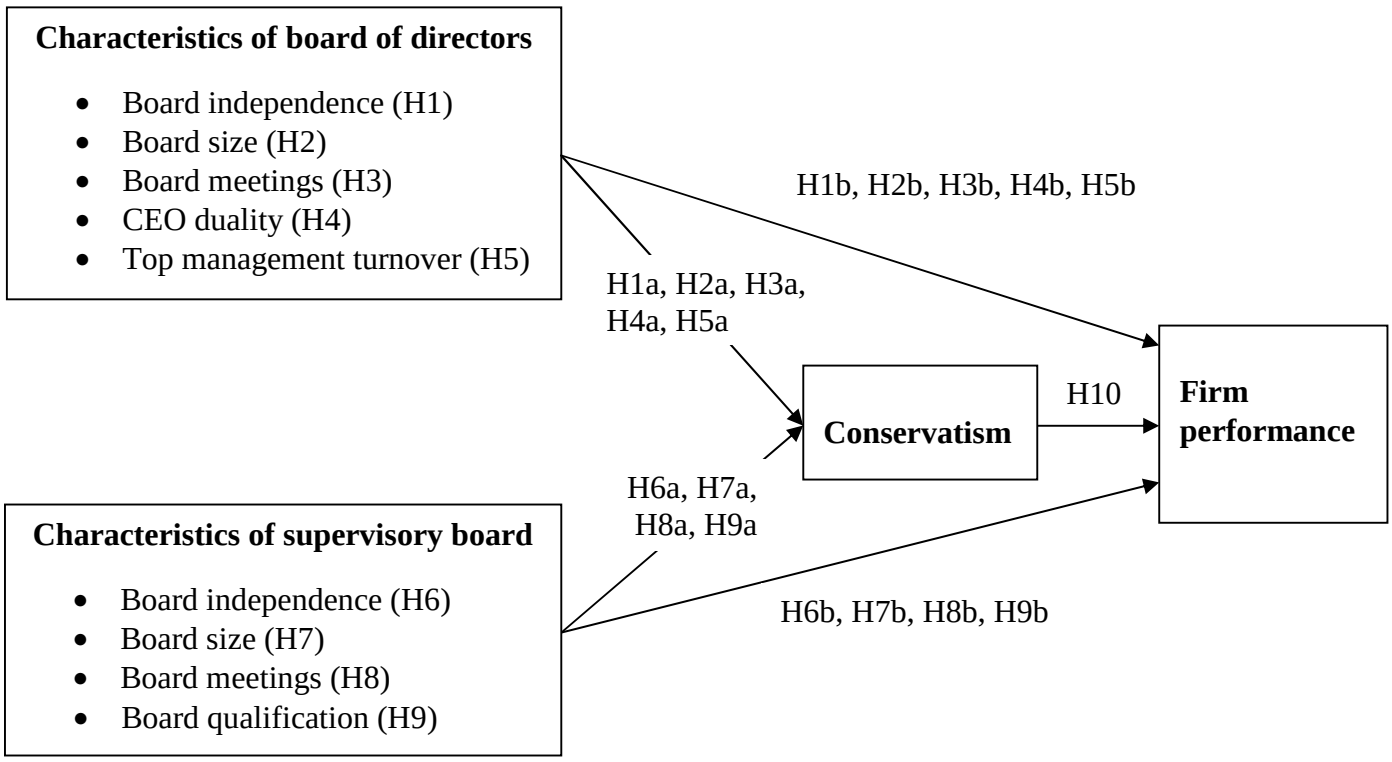


Figure 3.1 Research Framework of the study

As figure 3.1 shows, in terms of characteristics of board of directors and supervisory board, independence, size and frequency of meetings of the two boards, CEO duality, top management turnover and supervisory board qualifications are examined. The potential benefits of accounting conservatism for corporate governance suggest that conservatism is positively associated with strength of corporate governance and finally positively related to firm performance.

This thesis also examines the moderating effects of ownership concentration and state ownership on the effectiveness of corporate governance on conservatism and firm performance. It is expected that companies with strong corporate governance would adopt

more conservatism and have better firm performance. However, controlling shareholders may limit the effectiveness of corporate governance mechanisms on conservatism and firm performance. Figure 3.2 shows the moderating relationship.

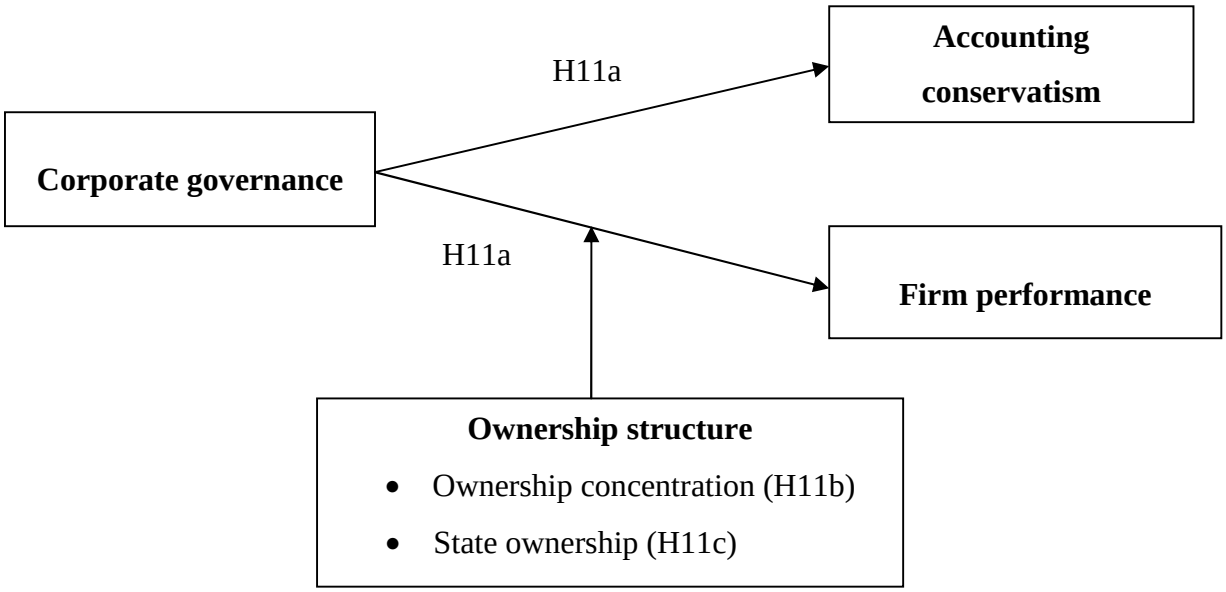


Figure 3.2 Moderating effect of ownership structure

3.3 Hypotheses development

3.3.1 Characteristics of board of directors

Conservatism is an important characteristic of high quality financial statements, and also an effective tool for corporate governance (Lin et al., 2011). Ball (2001) argued that conservatism could identify negative NPV projects by the timely recognition of economic losses. The timely identification provides the board with a signal to investigate poor investment decisions made by managers (Ahmed & Duellman, 2007). Therefore, conservatism is helpful for directors to monitor important decisions (Ahmed & Duellman, 2007). Furthermore, management has a tendency to engage in income increasing earnings

management for their own interests. An effective board is more likely to demand managers to adopt conservatism to prevent overcompensation (Lim, 2011). Under this view, a strong board will demand more conservatism (Ho, 2009).

The role of the board of directors is important in Chinese corporate governance. The Code of Corporate Conduct (2001) recommended Chinese listed companies to establish a board of directors. The purposes of the recommendation are to assign the monitoring power to the board and protect the interests of minority shareholders. An effective board of directors is expected to influence the behaviour of managers to ensure that they operate the company in the shareholders' interests. Because the Chinese government conducted gradual privatisation for listed SOEs, it realised that the reputation of companies could be damaged by ineffective boards, and could deter investors' interest (Lin, 2011). Therefore, the government has showed its determination in strengthening the effectiveness of board of directors.

Board independence

Board independence is a crucial element of board effectiveness. Board of directors needs to be independent of the managers to monitor them effectively (Lim, 2011). Independent directors are beneficial for efficient contracting, and can better understand the benefits of conservative accounting. They thus demand more conservatism in financial reporting (Ahmed & Duellman, 2007). A board with more inside directors, who are also the managers, will result in less monitoring, providing management with opportunities to employ aggressive accounting policies to get their own targets (Xia & Zhu, 2009). Another incentive for independent directors in China to monitor effectively is maintaining their reputation. Chinese companies like to nominate academics and professionals as independent directors. These people are very concerned about their reputation and any detected earnings manipulation or frauds in their employed companies can damage their reputation. As a result, these independent directors are motivated to detect the behaviour of opportunistic earnings management and ensure the high quality of financial reporting (Lin, 2011). The results of previous research on the effect of board independence on financial reporting and firm performance in Chinese companies were inconclusive. Lin (2011) argued that as the independent directors were recommended by the CSRC in 2001, they may not play an active

role before 2001 or immediately after 2001. The effectiveness of board independence should be improved in more recent years to follow the recommendation of the CSRC. Therefore, the following hypotheses are proposed:

H1a: A higher proportion of independent directors leads to more accounting conservatism.

H1b: A higher proportion of independent directors on the board leads to better firm performance.

Board size

The number of members may influence the functioning and monitoring ability of board of directors and hence the quality of reporting. Although several studies indicated that large boards were beneficial to companies because they could provide a broader pool of knowledge and better monitoring, the costs may outweigh the benefits from increasing the board size (Yermack, 1996). A large board can create a 'free rider' problem as each board director may rely on other members to perform monitoring duties (Duellman, 2006; Lipton & Lorsch, 1992). In addition, larger boards may decrease the effectiveness to exchange ideas; raise the coalition costs among directors (Firth et al., 2007) and create coordination problems (Forbes & Milliken, 1999; Jensen, 1993).

Although empirical research showed mixed findings on the relationship between board size and firm performance, more studies indicated that smaller boards were positively related to firm performance (Yermack, 1996; Chang, 2009) and positively associated with financial reporting quality (Rahman & Ali, 2006). Rahman and Ali (2006) claimed that a large board may be more difficult to control and may hamper the process of monitoring management. Moreover, Boonlert-U-Thai and Kuntisook (2009) and Ho (2009) found that smaller board size resulted in more conservatism. Therefore, this study hypothesizes that:

H2a: Firms with smaller board adopt more accounting conservatism.

H2b: Firms with smaller board have better firm performance.

Board meetings

There are two competing views relating to the number of board meetings. One view is that more frequent board meetings are effective in monitoring management and can better fulfil and protect shareholders' interests (Vafeas, 1999). A contrasting view is that more board meetings are not helpful if the meeting is not held for the meaningful exchange of ideas with management or among the directors themselves (Vafeas, 1999). Chen et al. (2006) indicated that the frequency of board meeting was positively related to fraud since directors may hold more meetings when they intend to engage in some illegal activities. In contrast, some empirical research demonstrated that the frequency of board meetings was an indication of the effectiveness of board. The results of Ho (2009) showed that the higher number of board meetings represented stronger governance and thus demanded more accounting conservatism. Although research based on Chinese companies suggested inconsistent results on the effect of board meetings on firm performance, considering that more board meetings indicate an effective board which can increase firm performance, a positive relationship between the two variables is predicted. Therefore the third group of hypotheses are stated as follows:

H3a: More frequent board meetings increase the employment of accounting conservatism.

H3b: More frequent board meetings increase firm performance.

CEO duality

Agency theory and stewardship theory present opposite views about CEO duality. According to agency theory, CEO duality is not effective in monitoring management. A board of directors chaired by the CEO is more likely to be controlled by CEO and thus to be ineffective in performing its duties (Lim, 2011). Conversely, stewardship theory claims that the duality improves the efficiency as there is no information breakdown between CEO and the board. In terms of Chinese listed companies, the CSRC (2001) encouraged them to separate the CEO and chairman roles. The separation also indicates the strength of outside directors monitoring activities because if CEO and chairman is the same person, the nomination and election of directors will be more influenced by the management than if the two roles are separated. Previous research indicated that by holding the dual roles, the CEO

may find it easier to manipulate earnings by using aggressive accounting policies. Thus, this paper presents the following hypotheses:

H4a: The existence of CEO duality leads to less accounting conservatism.

H4b: The existence of CEO duality leads to poorer firm performance.

Top management turnover

Top management turnover is also an indication of the effectiveness of board of directors as an important function of the board is to replace low quality management. Under an effective board, poor firm performance is expected to accompany top management turnover. In China, previous researchers supported the view by showing a negative relationship between firm performance and top management turnover. Moreover, the new top management, appointed under unsatisfactory performance, has incentives to manage earnings. Previous studies indicated that new management was likely to decrease reported earnings in the year he/she took over the company in order to show that he/she did a better job than the former in the following years. Therefore, new top management is more likely to adopt conservative accounting policies in the first year of his/her service.

It is important to separate forced turnover from normal turnover since only forced turnover is associated with firm performance. However, it is hard to identify in China because companies do not report the true reasons for top management turnover (Firth et al., 2006). The behaviour theory of organizational search solves the problem by proposing that firms use satisfactory as a rule in top management change decisions (Shen & Lin, 2009). According to this theory, when performance meet target, firms consider it satisfactory and tend to keep current routines and have little incentive to change existing things. When performance is under the target, firms consider it unsatisfactory and are motivated to seek alternatives to improve their performance. Shen and Lin (2009) applied the theory to the decision of top management turnover by suggesting that top managers were most likely to be replaced when performance was under target level and unlikely to be dismissed when performance met the target.

There are two sources of a firm's performance target: firm's past performance and the performance of other similar firms (Shen & Lin, 2009). Firms in emerging economies, such as China, may not use past performance as target due to rapid changes and uncertainties. Therefore, Shen and Lin (2009) adopted the performance of peer firms as the target performance of Chinese companies. They also pointed out that some firms' target is to become industry leaders and it would be ideal to survey managers to find out which firms are their peers. However, it is difficult to obtain this information in practice and industry median performance was finally used as all firms' performance target in their study. Following Shen and Lin (2009), this study also adopts industry median performance as performance target. When firm profitability drops below industry median, the more likely top management will be changed. Conversely, when firm performance is above industry median performance, top management turnover is unlikely to occur. Thus, based on the behaviour theory of organizational search, the following hypotheses are proposed.

H5a: Top management turnover leads to more conservatism in the first year of new management's service.

H5b: There is a negative relationship between top management turnover and firm performance in companies with lower industry median performance.

3.3.2 Characteristics of Supervisory board

China followed Germany and Japan by employing a two-tier board system (board of directors and supervisory board) to improve corporate governance. Therefore the characteristics of the supervisory board may be also associated with conservatism and firm performance. Most empirical research focused on the one-tier system and there is little empirical evidence relating to the relationship between conservatism and supervisory board. In addition, the supervisory board in Chinese listed companies is different from that in German listed companies, as it has no power to appoint and dismiss directors and executives. The difference necessitates an investigation of the impact of Chinese supervisory board on conservatism.

Independence of supervisory board

In principle, the board of supervisors should be independent to maintain its supervisory ability. However, members of board of supervisors in Chinese listed companies are not truly independent because they are appointed by the directors and have little power to act against them. In addition, supervisory boards in China comprise employee supervisors and stakeholder supervisors. Employee supervisors are seldom independent in fulfilling their supervisory duties because their salary and positions are determined by the management (Lee, 2012). There is no administrative protection provided in the Company Act to counter this threat, thus supervisory boards lack independence (Lee, 2012). Much empirical evidence based on Chinese listed companies failed to show the effectiveness of supervisory board in improving financial reporting and firm performance. However, the Code issued by CSRC (2002) has increased the power of supervisory board; its effectiveness is expected to be improved after 2002. Considering that independence of supervisory board is effective in supervising activities, this paper hypothesizes that:

H6a: A higher proportion of independent supervisors results in more accounting conservatism.

H6b: A higher proportion of independent supervisors results in better firm performance.

Supervisory board size and meetings

Supervisory board size and meetings are also showed to be relevant to the effectiveness of supervisory board. Similar to the board of directors, there are two converse views on the supervisory board size and number of meetings. In general, it is considered that small supervisory boards spend less time on internal coordination, thus members are able to take action easily and reduce cost (Xia & Zhao, 2009). In other words, supervisory board with fewer members can work more efficiently and is beneficial for enhancing earnings quality. In China, Xia and Zhao (2009) supported this view by proposing that supervisory board size was negatively associated with the earnings quality measured by the difference between profit indexes based on accrual system and profit indexes based on cash system.

In terms of supervisory board meetings, if supervisors meet more often they can better consult with management and monitor management decisions more accurately (Bremert & Schulten, 2009). In addition, research on China's companies showed a positive relationship between the number of supervisory board meetings and firm performance. Since a smaller supervisory board can work more efficiently and more supervisory board meetings are argued to be helpful to supervise management activities to provide high quality of accounting, the following two groups of hypotheses are proposed:

H7a: Firms with smaller supervisory board employ more accounting conservatism.

H7b: Firms with smaller supervisory board have better firm performance.

H8a: More frequent supervisory board meetings result in higher level of accounting conservatism.

H8b: More frequent supervisory board meetings result in better firm performance.

Supervisory board expertise

The qualifications of supervisors were given particular attention by the Code of CSRC in 2002. The professional knowledge or work experience of supervisors is perceived to be a prerequisite for performing well in their monitoring of financial and managerial performance (Shan & McIver, 2011). Although Shan and McIver (2011) found a non-significant relationship between expertise of the supervisory board and firm performance in Chinese listed companies, logically, more members with relevant professional knowledge or work experience should be beneficial to supervisory board's effectiveness. Thus the following hypotheses are presented:

H9a: A greater proportion of supervisors with professional knowledge or work experience results in more employment of accounting conservatism.

H9b: A greater proportion of supervisors with professional knowledge or work experience results in better firm performance.

3.3.3 Conservatism and firm performance

By constraining managers' opportunistic behaviour, accounting conservatism is expected to be beneficial for firm performance. According to LaFond and Roychowdhury (2008), managers with limited tenure and liability have incentives to overstate current earnings and unverifiable future cash flows for their private interests. The overstatement will result in an overpayment to managers, which is harmful for firm performance. Conservatism constrains managers' ability to increase current net assets and earnings (Watts & Zuo, 2011). Moreover, managers often continue to undertake negative NPV projects because current earnings will be decreased if they abandon these projects. Conservatism can identify economic losses from loss-making projects quickly and thus constrain managers' incentives to continue undertaking them (Watts & Zuo, 2011). Therefore, conservatism benefits firm performance by limiting operation of negative NPV projects (Watts & Zuo, 2011).

Chinese companies with concentrated ownership are controlled by majority shareholders who monitor management closely. Agency conflict between controlling and minority shareholders rather than conflict between managers and shareholders is prevalent in China's companies. Controlling shareholders have incentives to expropriate wealth from minority shareholders and can transfer resources from firms to themselves through related party transactions (Wu, 2011). Conservatism can constrain controlling shareholders' expropriation behaviour by reducing information asymmetry between them and other shareholders. As a result, conservatism is beneficial for performance of Chinese companies through reduced information asymmetry. Based on above arguments, the following hypothesis is proposed:

H10: Firms that employ more conservatism have better firm performance than firms that employ less conservatism.

3.3.4 Moderating effect of ownership structure

Although CSRC has regulated Chinese listed companies to operate in accordance with corporate governance practices, previous research indicated that board monitoring ability was not effective because of the influence of the controlling shareholders. Lam and Lee (2012)

and Cho and Kim (2007) showed that ownership concentration and state ownership had a moderating effect on the effectiveness of corporate governance mechanisms.

Due to the potential benefits of conservatism in corporate governance, this thesis proposes that companies with stronger corporate governance mechanisms would adopt more conservatism and lead to better firm performance. However, following previous studies, the performance of these governance mechanisms may be negatively affected because of concentrated ownership and state ownership in China. Therefore, the following hypotheses are presented.

H11a: Corporate governance affects the adoption of conservatism and firm performance, respectively.

H11b: Ownership concentration negatively moderates the positive effect of corporate governance mechanism on conservatism and firm performance, respectively.

H11c: State ownership negatively moderates the positive effect of corporate governance mechanisms on conservatism and firm performance, respectively.

3.4 Conclusion

This chapter has presented the research framework and developed hypotheses based on the literature review in Chapter 2. There are two groups of independent variables: board of directors' characteristics and supervisory boards' characteristics. The effect of these variables on conservatism and firm performance is proposed in the section of hypotheses development. In addition, the final group of hypotheses test the moderating effect of ownership structure on the effectiveness of corporate governance on conservatism and firm performance.

Chapter Four: Research Method

4.1 Introduction

This chapter provides an explanation on the sample selection and research design used to test the hypotheses developed in Chapter 3. First, it discusses the sample population and sources of the data. Second, it explains the relationship between variables and the measurement of all variables. Third, it presents empirical models that test the relationship between corporate governance mechanisms, conservatism and firm performance. Finally, a panel data methodology and the procedures to investigate the panel data are introduced.

4.2 Study population and sample selection

This thesis examines conservatism in an objective manner, thus archival data from companies' annual reports are mainly used. All Chinese listed companies are required by the China Securities Regulatory Commission (CSRC) to disclose information regarding their stock issues, half-year reports, annual report and reports for important events. An annual report is required by the CSRC to contain the report of the board of directors and the board of supervisors; therefore, all characteristics of the two boards can be investigated from the annual report. In general, this study aims to use relevant, quantitative accounting information from company annual reports to examine corporate governance, conservatism and performance of Chinese listed companies.

All companies listed in the Shanghai and Shenzhen stock exchange are included in the sample for this study except for financial companies because their structure and accounting practices differ significantly from non-financial companies (Wei, 2007). From 2007, all Chinese listed companies are required to adopt new accounting standards. Thus, annual reports from 2007 to 2010 are used for consistency. There are 1312 listed companies within the sample years. Companies with incomplete online annual reports or which were delisted during the sample period are excluded. Moreover, companies that experienced significant mergers or reconstruction are also excluded. Table 4.1 lists the final sample of the study.

Table 4.1 Final sample of the study

Sample selection from 2007-2010	
Total number of companies listed on the two stock exchanges:	1312
Less:	
Financial related companies	11
Companies with incomplete online annual reports or delisted during sample period	65
Companies involved with significant mergers or reconstruction	267
Final sample	**969**

Since ownership structure is different across industries, Table 4.2 presents a breakdown of initial sample companies by industry using the industry classification scheme provided by CSRC. The largest percentage of the sample is from the manufacturing industry, which comprises 57.38% of all companies. This is followed by wholesale and retail (11.35%) and real estate (8.57%). Communication and culture industry accounts for the smallest proportion, only 1.03% of the sample.

Table 4.2 Sample breakdown based on industry

Industry	**No. Of firms**	**Percentage**
Agriculture, forestry, livestock farming, fishery	17	1.75%
Communication and cultural industry	10	1.03%
Construction	24	2.48%
Electric power, gas and water production and supply	47	4.85%
Information Technology	28	2.89%
Manufacturing	556	57.38%
Mining	25	2.58%
Real estate	83	8.57%
Social service	40	4.13%
Transport and storage	29	2.99%
Wholesale and retail	110	11.35%
Total	**969**	**100%**

To investigate the firm size of companies, the sample is broken down according to the book value of companies' total assets. According to Xu and Wang's (1997) study, firms with a book value of total assets lower than RMB 500 million are classified as small firms, firms with total assets between RMB 500 million and 1.5 billion are medium firms and firms with total assets above RMB 1.5 billion are categorised as large firms. Following this criterion, 659 companies in the sample are classified as large companies, 246 are classified as medium companies and the other 64 are small companies. Table 4.3 shows the firm size classification of sample companies.

Table 4.3 Firm size classification of sample companies

Firm size	No. of firms	Percentage
Large companies	659	68.01%
Medium companies	246	25.39%
Small companies	64	6.60%
Total	**969**	**100%**

4.3 Data collection

Data are collected from two sources: annual reports of sample companies and Datastream. Mergent Online is a database that can be used to access annul reports of listed companies all over the world. The reports of companies listed in China's two stock exchanges can be collected through this database. Data on ownership structure, board of directors and supervisory board are extracted from annual reports. Market values and monthly share price which are used to calculate share returns are collected from Datastream.

4.4 Research design

Variables in this thesis include conservatism, corporate governance mechanisms and firm performance. In particular, the study investigates whether corporate governance mechanisms adopted by Chinese listed companies ~~improve~~ are associated with conservatism and firm performance respectively. Moreover, it also investigates the ~~effec~~t association between ~~of~~ conservatism ~~on~~ and firm performance. Specifically, corporate governance mechanisms, including characteristics of board of directors and characteristics of supervisory board, are expected to be associated with conservatism and firm performance. Thus, the relationship between the three variables can be functionally expressed as follows:

1. Conservatism:

= f [ownership structure + characteristics of board of directors + characteristics of supervisory board]

2. Firm performance:

= f [ownership structure + characteristics of board of directors + characteristics of supervisory board]

3. Firm performance: = f [conservatism]

In the first and second functions, corporate governance variables are independent variables with conservatism and firm performance as dependent variables respectively. In the third function, conservatism is the independent variable with firm performance as the dependent variable. Furthermore, the moderating effect of ownership structure on the effectiveness of governance mechanisms on conservatism and firm performance is tested in Section 5.4.8.

4.5 Measurement of corporate governance variables

This research examines some unique corporate governance characteristics of Chinese companies and their association with accounting conservatism. Board of directors and board of supervisors are investigated because they are important elements of strong corporate governance and ultimately affect the quality of financial reporting and firm performance. Moreover, another important corporate governance mechanism, ownership structure, is examined in the moderating relationship. A detailed description of definitions of the corporate governance variables is given in this section. A summary of the measures for these variables is provided in Table 4.4.

Table 4.4 Summary of the measures of corporate governance variables

Variables	Acronym	Measurements
Characteristics of board of directors		
1) Board independence	BID	Percentage of independent directors to total directors on the board
2) Board size	BS	The number of directors
3) Board meetings	BM	Total number of meetings conducted in a year
4) CEO duality	CEODUO	Dummy=1 if CEO-Chairman roles are combined and dummy=0, otherwise
5) Top management turnover	TURN	Dummy=1 if top management is changed and dummy=0, otherwise
Supervisory board characteristics		
6) Supervisory board independence	SBID	Proportion of independent supervisors to total supervisors
7) Supervisory board size	SBS	The number of supervisors
8) Supervisory board meetings	SBM	The total number of meetings conducted in a year
9) Supervisory board qualification	SBQ	Percentage of supervisors having professional knowledge or work experience
Ownership Structure		
10) Ownership concentration	SHARE	Percentage of shareholdings controlled by the largest shareholders
11) State-owned shares	ST	Percentage of state-owned shares

4.5.1 Board of directors

Board independence (BID) is measured by the percentage of independent directors on the boards. Board size (BS) refers to the natural logarithm of total number of directors. Board

meetings (BM) is defined as the number of meetings the board has held in a year. Consistent with previous research (Peng et al., 2007; Huang & Liang, 2007; Peng, Li, Xie & Su, 2010), companies in which the CEO and the board chairman are the same person are coded as 1 and others are coded as 0. The same method is applied to the measure of top management turnover. Companies with forced top management turnover are coded as 1 and 0, otherwise. Previous research on top management turnover mainly focused on the CEO who is usually considered the top executive of the company (Shen & Lin, 2009). However, Chinese companies traditionally use the titles of General Manager or President to represent top management and only recently some companies began to use the title of CEO. Following Shen and Lin (2009), for simplicity, this thesis views General Manager and President as equivalents of CEO.

4.5.2 Board of supervisors

Similar to board of directors, independence of the supervisory board (SBID) is measured by the proportion of independent members on the supervisory board. Unlike independent directors, independent supervisors are not shown separately from inside supervisors in companies' annual reports. Following Cho and Rui (2009), independent supervisors are defined as non-paid members to distinguish them from the members who receive remuneration from the company. Supervisory board size (SBS) is the natural logarithm of total number of supervisors. Supervisory board meetings are measured as the number of meetings held yearly. The qualification of supervisors is considered as an important factor of effective corporate governance. The number of supervisors having professional knowledge or work experience in relevant areas (accounting, finance and law) divided by the total number on the supervisory board is the proxy for supervisory board qualification.

4.5.3 Ownership structure

Ownership structure is identified by ownership concentration and state ownership. Concentrated equity ownership can be ineffective for firms' governance because it allows the controlling shareholders too much discretionary power to gain their own interest at the

expense of minority shareholders (Bai et al., 2004). To cover up the expropriation of minority shareholders' interest, controlling shareholders may distort the financial statements, which reduces the quality of firms' financial reporting. Following existing literature (Hu et al., 2010; Wei, 2007; Ding et al., 2007; Singh & Gaur, 2009), the percentage of shareholdings owned by the largest shareholder is used to measure ownership concentration.

Dominance of state shareholders is a unique characteristic in Chinese companies. The percentage of state-owned shares is measured as the number of shares controlled by the state divided by the total number of shares. Some previous studies treated state-owned legal person shares as legal person shares rather than state shares according to the official classification of ownership. However, since state-owned legal person shares are actually controlled by the state, this thesis follows Bai et al. (2004) and includes shares of this kind as state-owned shares.

4.6 Measurement of conservatism

Basu's (1997) method is the most popular measurement of conservatism used by researchers. Despite some limitations of this method, it is also used most frequently by researchers investigating the Chinese economy. Consistent with previous research (Chen & Huang, 2007; Liu & Wang, 2006; Kung et al., 2010; Lin et al., 2011), Basu's (1997) model is used in this study to measure conservatism. Besides this model, those developed by Ball and Shivakumar (2005) and Givoly and Hayn (2000) are two popular alternative measures of conservatism. The asymmetric accruals to cash flows measure proposed by Ball and Shivakumar (2005) is based on the same underlying "asymmetric timeliness" intuition as Basu (1997). Their measure replaced market return measures with cash-flow measures and made it suitable for use with private companies (Artiach & Clarkson, 2011). Givoly and Hayn (2000) argued that conservative accounting led to persistently negative accruals and thus more negative average accruals reflect more conservatism (Artiach & Clarkson, 2011). Following Xia and Zhu (2009), the accrual-based conservatism proposed by Givoly and Hayn (2000) is used as the alternative measure of conservatism in this study.

4.6.1 Asymmetric timeliness

Basu (1997) used asymmetric timeliness to measure conservatism. In order to test asymmetric timeliness, Basu (1997) used positive and negative unexpected annual stock returns to represent good and bad news, respectively. The greater the timeliness of earnings for bad news means that earnings are simultaneously more sensitive to negative unexpected returns than positive returns, measured by reverse-regression of earnings on returns (Basu, 1997). The Basu's (1997) model is as follows:

$E_{it}/P_{it-1} = \beta_0 + \beta_1 R_{it} + \beta_2 D_{it} + \beta_3 R_{it} * D_{it} + \varepsilon_{it}$

Where:

For each firm (i) and each year (t),

E_{it} = Earnings before extraordinary items

P_{it-1} = Market capital of the firm

R = Fiscal year share return

D = Dummy variable is equal to 1 if returns are negative; 0 if otherwise

In the above regression, the response of earnings to good news is measured by β_1. Conversely, $\beta_1 + \beta_3$ measures the response of earnings to bad news. Intercept (β_0) and return (β_1) are expected to have positive coefficients. A positive intercept in the regression indicates the realised gains reflecting good news (Basu, 1997). The greater the coefficients on β_3, the quicker losses are recognized in earnings than gains (Duellman, 2006). Therefore, β_3 is the primary measure of conservatism in Basu's (1997) model. In the model, R_{it} is 12-month compound returns on firm i from nine months before the fiscal year-end t to three months after the end of the fiscal year. It is calculated to end three months after the fiscal year-end to exclude the market response to the previous year's earnings from the current period's economic news (Basu, 1997). Monthly share prices obtained from Datastream are used to compute annual compounded share returns.

A single year measure of earnings and returns was employed in Basu's original model. However, annual horizon estimates are affected by firms' failure to record asset write-downs

since previous asset value increases were not recorded because of conservatism (LaFond & Watts, 2008). Pae, Thornton and Welker (2005) argued that the annual Basu coefficient understates the degree of conservatism. Moreover, Roychowdhury and Watts (2007) indicated that the single year asymmetry is an implication of asymmetric verification standards instead of a measure of aggregate conservatism. They claimed that asymmetric timeliness measures estimated over multiple years can progressively eliminate time lags between returns and earnings. Their results showed that asymmetric timeliness measured conservatism more efficiently when it is estimated accumulatively over several years. A number of studies (Ahmed & Duellman, 2007; LaFond & Roychowdhury, 2008; Duellman 2006) accumulated the returns and earnings over a three years period. Following the previous studies, this thesis adopts a similar approach. Therefore, the measure for 2007 needs financial data of 2005-2007. As mentioned before, R_{it} is share returns of a firm *i* from nine months before fiscal year-end *t* to three months after the end of fiscal year. In China, the financial year is from 1 January to 31 December, thus R for 2007 is the buy and hold return starting from 1 April 2005 and ending 31 March 2008. For a sample of the four years period (2007-2010), six years complete accounting data (2005-2011) are required for calculating the asymmetric timeliness measure.

4.6.2 Accrual-based conservatism (CONACCR)

The accrual-based measure of conservatism is calculated as income before extraordinary items and discontinued operations (INC) plus depreciation expense (DEPRN) less operating cash flows (OCF) deflated by average total assets (TA) (Duellman, 2006). The accrual value is averaged over a three-year period centred in year t. CONACCR is the average accrual value multiplied by -1, so that higher values of CONACCR indicate greater conservatism. The form is shows as follows:

Accruals = [(INC + DEPRN – OCF)] / TA
CONACCR= (Accruals/3 years) x (-1)

The intuition of this measure is that conservatism results in persistently negative accruals (Duellman, 2006). More negative accruals over the respective period indicate more

accounting conservatism. Averaging over a number of years can mitigate the effects of any temporary large accruals because accruals may be reversed within one to two years (Duellman, 2006). To measure 2007 CONACCR financial data from 2006-2008 is required; and financial data from 2009-2011 is required to measure 2010 CONACCR. The sample year of this thesis is 2007-2010, thus six years complete accounting data (2006-2011) are required to measure accrual-based conservatism.

4.7 Measurement of firm performance

Following previous studies based on Chinese companies (Peng et al., 2007; Duellman, 2006), two popular accounting-based performance measures, return on equity (ROE) and net profit margin, are used in this study. ROE is defined as "net income divided by the average of owners' equity during the year" (Qi et al., 2000, p. 599) while net profit margin is the firms' net income as a percentage of sales. Besides accounting-based measures, market-based indicators such as Tobin's Q and market to book ratio (MTB) are also popular measures of firm performance in the literature. Peng et al. (2007) argued that market-based measures could not be used to reflect performance of Chinese companies because Chinese capital markets were not sufficiently well developed. However, many studies (Qi et al., 2000; Bonn et al., 2004; Sun et al., 2002) still used market-based indicators to measure performance of Chinese companies. Therefore, this study uses MTB as an alternative measure of firm performance. Tobin's Q is "the ratio of the market value of equity and debt of a firm to the replacement cost of its assets" (Hu et al., 2010, p. 736). However, as Hu et al. (2010) suggested, estimating the value of company debts is a well-known problem for China's companies when calculating Tobin's Q value. MTB has the benefit of being easily and precisely measured (Barnhart, Marr & Rosenstein, 1994). Therefore, Tobin's Q is not used in this study.

As an alternative performance measure, MTB is not used in the model testing the relationship between conservatism and performance, because it is included as a control variable to control growth opportunities in asymmetric timeliness model (see section 4.10.3).

4.8 Control variables

Following previous studies, firm size, sales growth, profitability, leverage and industry are control variables in conservatism models. Sales growth and market to book ratio are used to control for growth in the accrual-based conservatism model and asymmetric timeliness model respectively.

Firm size: Firm size is measured by the natural logarithm of total assets. Previous research indicates that firm size strongly influences financial reporting quality. According to Watts and Zimmerman (1978), large companies may defer current reported earnings to future periods subject to political costs. However, Noe and Rebello (1996) suggested that smaller companies tended to experience greater information asymmetry, hence adopted higher conservatism. Most large companies in China are state-owned enterprises (SOEs) with high state ownership concentration. These companies are more likely to decrease the demand for recognizing bad news on earnings promptly (Kung et al., 2010). Therefore, a negative relationship is expected between firm size and conservatism for Chinese listed companies.

Sales growth: Sales growth is the percentage of annual growth in total sales. According to Ahmed, Billings, Morton, and Stanford-Harris (2002), sales growth is likely to affect CONACCR for the following reasons. First, sales growth is likely to influence accruals such as receivables and inventory changes, and thus affects CONACCR. Second, CONACCR may not be a good measure of conservatism for firms with declining sales. Following Ahmed et al. (2002), it is expected that there is a negative association between sales growth and accrual-based conservatism since the higher sales growth will improve current accruals, and in turn decreases CONACCR.

MTB: Market to book ratio is the proxy for growth and is measured as the ratio of the market value of equity to book value of equity. Following previous studies (Mohammed et al., 2010; Lim, 2011), MTB is controlled in asymmetric timeliness model because changes in growth opportunities could create variation in the asymmetric timeliness that is not related to conservatism (Roychowdhury & Watts, 2007). Prior studies, such as those carried out by

García Lara and Mora (2004) and Pae et al. (2005) have shown a negative relationship between MTB and the asymmetric timeliness of earnings. Therefore, an inverse relationship is expected between MTB and asymmetric timeliness.

Profitability: Profitability is measured by return on assets. For firms with low profitability, the reduction in profits due to accounting conservatism will be relatively costly. In other words, high-profitability firms are more likely to adopt conservatism since they can better afford the conservative choice (Ahmed et al., 2002). Furthermore, Lin (2011) indicated that managers that performed poorly are more likely to manage earnings because of the threat of dismissal. Therefore, a positive association is expected between profitability and accounting conservatism. Profitability is measured by return on assets, following Kung et al. (2010) who examined Chinese listed companies.

Leverage: Leverage is calculated as total long term liabilities divided by total assets. As discussed before, debt level may not affect the demand for conservatism in SOEs since banks will lend money to them even when their performance is unsatisfactory. However, debt level does influence the demand for conservatism in non-state owned companies. It is argued that firms with high levels of leverage are more likely to have greater conflict between bond-holder and share-holder (Duellman, 2006). Therefore, these highly leveraged firms are expected to adopt more conservatism to reduce these conflicts. A positive relationship between leverage and conservatism is predicted.

Industry: Industry is also controlled to eliminate the exogenous effects on the individual company's performance. It is likely that ownership structure of Chinese listed companies is significantly different across industries and specific industries adopt particular corporate governance practices. It is also an additional control for growth opportunities and economic rents because growth opportunities and rents differ across industries. Thus, it is expected that industry type will be associated with conservatism. Following previous Chinese studies (Xi, 2009; Tian, 2001; Lai, 2005), industry is controlled based on the 2-digit industry codes defined by the CSRC.

4.9 Aggregate measure of corporate governance (GOV)

This thesis also investigates whether ownership concentration and state ownership constrain firms' governance from employing conservatism and improving firm performance. To measure firms' governance, an aggregate measure is used following previous studies. Eight corporate governance mechanisms are incorporated in this thesis as the determinants of strong governance. They are board independence, board meetings, board size, CEO duality, supervisory board independence, supervisory board meetings, supervisory board size, and supervisory board qualifications.

4.9.1 Independence of board of directors

Board independence is considered as an important factor for good corporate governance because it could make the board of directors monitor management more effectively. In China, the CSRC requires the board to comprise a minimum of one-third independent directors. Empirical evidence showed that independent directors were associated with strong corporate governance and boards dominated by independent directors were more likely to demand more conservative accounting (Ho, 2009). Therefore, a higher proportion of independent directors on the board is an attribute of stronger corporate governance.

4.9.2 Board size

Board size has been shown to have a material effect on the quality of corporate governance (Khanchel, 2007). Some studies supported the view that large boards were inactive and could be dysfunctional. For instance, Hermalin and Weisbach (2003) argued that when a board became too large, free rider and monitoring problems increased within the board and the board became more symbolic. Similarly, Yermack (1996) and Eisenberg, Sundgren and Wells (1998) found a significant negative relationship between board size and firm value as measured by Tobin's Q and ROA respectively, indicating that smaller boards were more effective due to fewer communication and coordination problems (Khanchel, 2007). Therefore, small boards contribute to stronger governance.

4.9.3 Board meetings

The number of board meetings is a proxy of board diligence. In general, more frequent board meetings are effective for monitoring management and to better protect shareholders' interests. Boards should be willing to increase frequency of meetings if the situation requires significant board input and supervision (Shivdasani & Zenner, 2004). Previous results (Ho, 2009) indicated that higher number of board meetings represented stronger governance. Thus, greater frequency of board meetings is considered an attribute of strong governance in this thesis.

4.9.4 CEO duality

Agency theory and stewardship theory explain two conflicting views on whether the CEO and chairman roles should be separated. Agency theory proposes the separation of the two roles to ensure that the board is independent from management while stewardship theory argues that the combination of the two roles improves efficiency. Supporting agency theory, Goyal and Park (2002) showed that combing in CEO and chairman positions made it difficult for a board to remove a poorly performing CEO, which reduced the flexibility of a board to address low performance. Although there are both benefits and costs for the separation of the two roles, countries like UK and China embrace the idea of separation and consider it important for board independence. As a result, CEO duality is viewed as an attribute of weak governance.

4.9.5 Independence of supervisory board

The Supervisory board has a duty to oversee the board of directors, thus the presence of independent supervisors is important to ensure that it can perform its monitoring duty effectively. Previous studies (Greco, 2012; Velte, 2010) showed that the proportion of independent members in the supervisory board was negatively related to earnings management and positively associated with firm performance. Following previous studies, independence of supervisory board is viewed as an attribute of good governance.

4.9.6 Supervisory board size and meetings

Supervisory board size and meetings also affect firms' earnings quality and financial performance. Consistent with the impact of board of directors, this thesis proposes that smaller supervisory board size and more supervisory meetings are associated with strong firms' governance.

4.9.7 Supervisory board qualification

Because responsibilities of the supervisory board are technical in nature, it is essential to appoint those with professional knowledge and work experience in accounting, finance, law and other relevant areas (Dahya et al., 2002). The Code issued by CSRC in 2002 has given particular attention to the qualifications of supervisors, as a prerequisite for monitoring financial and managerial performance effectively (Shan & McIver, 2011). Since supervisory board qualification is important for the supervising ability of a supervisory board, the presence of supervisors with professional knowledge or relevant work experience is considered as an attribute of strong governance.

4.9.8 Ranking methodology

Following Khanchel (2007), percentile rankings are calculated to measure GOV where a high score means strong governance. According to Yunos (2011), there are two steps to calculate the percentile ranking. First, the eight governance variables are ranked according to their numerical value. For the variables, independence of the two boards, meetings of the two boards and supervisory board qualification, values are sorted from lowest to highest with the lowest value assigned rank 1. In terms of board size, CEO duality and supervisory board size, values are ranked in reverse order which means the highest value of the variable is assigned rank 1. In the STATA statistical software, syntax *egen rank_ (variable name) = rank (variable name)* can be used to assign ranks, which puts the lowest value first. To rank in reverse, *egen rank_ (variable name) = rank (- variable name)* is employed. After ranking all the eight mechanisms, these ranked scores are added and divided by eight, as the average

ranked score of GOV. To calculate the percentile rank, the average rank score of each company is then divided by the total number of companies.

Multiple regressions analysis is performed to examine the moderating effect of concentrated ownership and state ownership on the influence of corporate governance on conservatism and firm performance. A moderating relationship can be illustrated using a three-variable system in which one of the variables is a dependent variable, a second variable is an independent variable, and a third variable is viewed as a moderator variable (Jaccard & Turrisi, 2003). In this system, the dependent variable is expected to be influenced by the independent variable and a moderating relationship exists when the influence of the independent variable on the dependent variable is different depending on the value of the moderator variable (Jaccard & Turrisi, 2003). There are two models to investigate the moderating effect of ownership concentration (SHARE) and state ownership (ST) on the effectiveness of corporate governance (GOV) on conservatism and firm performance, respectively. As shows in Figure 3.2 in Chapter 3, ownership concentration and state ownership are moderating variables and corporate governance is the independent variable of the two models. Conservatism and firm performance are dependent variables of the two models respectively.

Following Yunos, Smith, Ismail and Ahmad's (2011) method, SHARE and ST are multiplied with GOV separately to refer to the effect of ownership concentration and state ownership on corporate governance. The two interaction variables, SHARE*GOV and ST*GOV are then included in the original regression models used to test the earlier hypotheses, but excluding the eight variables that have been incorporated in the GOV. A moderating effect exists when the coefficients on SHARE*GOV and ST*GOV are significant. For the asymmetric timeliness model, the interacted variables are: SHARE*GOV*R, SHARE*GOV*RD, ST*GOV*R and ST*GOV*RD.

4.10 Regression models

4.10.1 Relationship between corporate governance and conservatism

Accrual-based (CONACCR) measure of conservatism

The following regression model examines the effects of characteristics of the board of directors and characteristics of the supervisory board on accrual-based conservatism.

$$CONACCR_{it} = \beta_0 + \beta_1 BID_{it} + \beta_2 BDGOV_{it} + \beta_3 BS_{it} + \beta_4 BM_{it} + \beta_5 CEODUO_{it} + \beta_6 TURN_{it} + \beta_7 SBID_{it} + \beta_8 SBS_{it} + \beta_9 SBM_{it} + \beta_{10} SBQ_{it} + \beta_{11} Firm\ size_{it} + \beta_{12} Sales\ growth_{it} + \beta_{13} Profitability_{it} + \beta_{14} Leverage_{it} + \beta_{15} Industry_{it} + \varepsilon_{it}$$

Where for each firm (i) and each year (t),

$CONACCR_{it}$ = Givoly and Hayn's (2000) accrual based measure of conservatism.

BID_{it} = Percentage of independent directors to total directors on the board.

$BDGOV_{it}$ = Dummy=1 if government officers are independent directors; 0, otherwise.

BS_{it} = Natural logarithm of number of directors.

BM_{it} = Number of board of directors meetings per year.

$CEODUO_{it}$ = Dummy =1 if CEO-Chairman roles are combined; 0 otherwise.

$TURN_{it}$ = Dummy=1 if top management is forced to resign; 0 otherwise.

$SBID_{it}$ = Proportion of independent supervisors to total supervisors.

SBS_{it} = Natural logarithm of number of supervisors.

SBM_{it} = Number of supervisory board meetings per year.

SBQ_{it} = Percentage of supervisors with professional knowledge or relevant work experience.

$Firm\ size_{it}$ = Natural logarithm of total assets.

Sales growth$_{it}$ = Annual percentage change in sales.

Profitability$_{it}$ = Profit margin.

Leverage$_{it}$ = Total long term liabilities/ total assets.

Industry$_{it}$ = This dummy variable is classified according to the industry classification code issued by CSRC.

Asymmetric timeliness measure of conservatism (AT)

The following is the original model of Basu's (1997) asymmetric timeliness:

$E_{it}/P_{it-1} = \beta_0 + \beta_1 R_{it} + \beta_2 D_{it} + \beta_3 R_{it} * D_{it} + \varepsilon_{it}$

This original model is extended to examine the effects of characteristics of the board of directors and characteristics of the supervisory board on accounting conservatism. These independent variables and the control variables including firm size, market to book ratio, profitability, leverage and industry interact with each variable in the original model. The model showing the interaction of board independence with each component in the original model is illustrated as follows. The remaining independent variables have similar interactions.

$E_{it}/P_{it-1} = \beta_0 + \beta_1 R_{it} + \beta_2 D_{it} + \beta_3 R_{it} * D_{it} + \beta_4 BID_{it} + \beta_5 R_{it} * BID_{it} + \beta_6 D_{it} * BID_{it} + \beta_7 R_{it} * D_{it} * BID_{it} + \ldots\ldots\ldots + \varepsilon_{it}$

The effect of the respective independent variable on accounting conservatism is represented by the coefficient of the interaction term R*D with the independent variable (Yunos et al, 2012). For example, in the above model, β_7 represents the effect of board independence on asymmetric timeliness. β_7 is expected to be positive if independent directors increase the employment of conservatism as proposed.

4.10.2 Corporate governance mechanisms and firm performance

In this thesis, firm performance is measured by ROE, net profit margin and MTB. To test the effects of corporate governance mechanisms on firm performance, the following regression model is employed:

$$Performance_{it} = \beta_0 + \beta_1 BID_{it} + \beta_2 BS_{it} + \beta_3 BM_{it} + \beta_4 CEODUO_{it} + \beta_5 TURN_{it} + \beta_6 SBID_{it} + \beta_7 SBS_{it} + \beta_8 SBM_{it} + \beta_9 SBQ_{it} + \beta_{10} Firm\ size_{it} + \beta_{11} Leverage_{it} + \beta_{12} Industry_{it} + \varepsilon_{it}$$

In the above two models, ROE, net profit margin and MTB are dependent variables, characteristics of the two boards are independent variables and firm size, leverage and industry are control variables.

4.10.3 Conservatism and firm performance

Following previous research (Ahmed & Duellman, 2011; Watts & Zuo, 2011), the following two models are used to test the relationship between conservatism and firm performance:

(1) Empirical test using the accrual-based measure of conservatism

$$Performance_{it} = \beta_0 + \beta_1 CONACCR_{it} + \beta_2 Leverage_{it} + \beta_3 Firm\ size_{it} + \beta_4 Sales\ growth_{it} + \beta_5 Industry_{it} + \varepsilon_{it}$$

(2) Empirical test using the asymmetric timeliness measure of conservatism

$$E_{it}/P_{it-1} = \beta_0 + \beta_1 R_{it} + \beta_2 D_{it} + \beta_3 R_{it}*D_{it} + \beta_4 Performance_{it} + \beta_5 R_{it}*Performance_{it} + \beta_6 D_{it}*Performance_{it} + \beta_7 R_{it}*D_{it}*Performance_{it} + \beta_8 Leverage_{it} + \beta_9 R_{it}*Leverage_{it} + \beta_{10} D_{it}*Leverage_{it} + \beta_{11} R_{it}*D_{it}*Leverage + \beta_{12} Firm\ size_{it} + \beta_{13} R_{it}*Firm\ size_{it} + \beta_{14} D_{it}*Firm\ size_{it} + \beta_{15} R_{it}*D_{it}*Firm\ size_{it} + \beta_{16} MTB_{it} + \beta_{17} R_{it}*MTB_{it} + \beta_{18} D_{it}*MTB_{it} + \beta_{19} R_{it}*D_{it}*MTB_{it} + \beta_{20} Industry_{it} + \beta_{21} R_{it}*Industry_{it} + \beta_{22} D_{it}* Industry_{it} + \beta_{23} R_{it}*D_{it}* Industry_{it} + \varepsilon_{it}$$

In the above two models, performance is measured by ROE and net profit margin. MTB is not used as performance measure in the above models because it has been included as a control variable in the asymmetric timeliness model. Leverage, firm size, sales growth, MTB and industry are control variables.

4.11 Panel data methodology

Panel data methodology is employed to investigate the relationship between corporate governance, conservatism and firm performance. Accounting studies (Shan & McIver, 2011; Black et al. 2006; Bai et al. 2004; Xia & Zhu, 2009) have increasingly relied on panel data. STATA statistical software version 12 is used for data analysis because it is appropriate for panel data regression.

Panel data, also known as longitudinal data, are typically known as data including time observations of a quantity of individuals. Thus, at least two dimensions— a cross-sectional dimension and a time series dimension— are involved in the observation of the data (Hsiao, 2007). Since the sample in this study includes data both across firms and over time, panel data methodology is adopted. Panel data analyses usually provide the researcher a large quantity of data points, which increases the degree of freedom and decreases the collinearity among explanatory variables (Hsio, 2003). Baltagi (2005, p.4) concluded several advantages of panel data over purely cross-sectional or time-series data as following:

(1) "Controlling for individual heterogeneity". Individuals, firms, states or countries are heterogeneous as suggested by panel data. This heterogeneity cannot be controlled by time series and cross-sectional studies and may result in biased results. Panel data however can control invariant variables.

(2) Panel data are "more informative, more variability, less collinearity among the variables, more degrees of freedom and more efficiency". Time-series studies have the problem of multicollinearity. Panel data are less likely to have this problem because the cross-sectional dimension provides lots of variability, adding more informative data. In addition, more reliable parameter estimates are produced by more informative data.

(3) "Panel data are better able to study the dynamics of adjustment". Although cross sectional distributions look relatively stable, they hide a multitude of changes.

(4) Panel data can identify and measure effects that cannot be detected in either pure cross-sections or time-series data.

(5)Panel data allow us to “construct and test more complicated behavioural models than pure cross-section or time-series data”. Fewer restrictions are imposed on a panel data study than on a purely time-series study.

(6) Panel data are usually collected on micro units, such as individuals, firms and households. Many variables can be measured more accurately at the micro level, and biases arising from aggregation over individuals or firms can be eliminated.

For the econometric analysis of panel data, it cannot be assumed that the observations are independently distributed across time. Thus, special models and methods have been developed for panel data analysis (Wooldridge, 2009). Baddeley and Barrowclough (2009) suggested that the simple ordinary least squares (OLS) is only valid when all the parameters of the model are constant across space. Therefore, the simple OLS is not likely to be valid for samples that have some fixed effects i.e. firm-specific effects which are time invariant but unobservable. If these fixed effects are ignored, heterogeneity bias is generated (Baddeley & Barrowclough, 2009). The bias occurs since the time invariant fixed effects, which can affect individual cross-sectional units, are not included in the deterministic part of the model. Thus in essence, heterogeneity bias is a form of omitted variable bias which will produce autocorrelated errors. Panel estimation technique is a solution to eliminate heterogeneity bias, using either fixed effects model or random effects model (Baddeley & Barrowclough, 2009).

4.11.1 Fixed effects model

For many years, how to statistically control for unobserved variables was the most difficult problem for a project. The fixed effects model is a class of regression method that can control for variables that are not measured or cannot be measured. The model treats unobserved time-invariant differences of individuals to be a set of fixed parameters, which can be directly estimated or partialed out of the estimating equations (Allison, 2009). The fixed effects model thus allows for correlations between unobserved variables and the observed variables. The effects of the unobserved variables are not really controlled if such associations are not allowed (Allison, 2009). However, it may not be efficient when the correlations are really zero. According to Allison (2009), there are two basic data requirements to use fixed effects

model. First, at least two occasions are needed when to measure the dependent variables for each individual and these measurements must have the same meaning and metric. Second, the dependent variables must vary in value across the occasions for some substantial portion of the sample.

There are also some disadvantages for fixed effects method. First, time constant independent variables cannot be examined in a regression model (Baltagi, 2005). Moreover, standard errors of fixed effects estimates may be significantly larger than random effects estimates in many cases, resulting in higher *p* values and wider confidence intervals (Allison, 2009). Despite these disadvantages, Jager (2008) suggested that for accounting researchers, it is more important to know that without controlling for individual fixed effects "an omitted variable bias problem and inconsistent estimates of the regression parameters" could arise.

The fixed effects approach can be accomplished either by dummy variables or through constructing mean deviations. The dummy variable method requires data having a different structure: one record for each period for each individual (Allison, 2009). Creating a set of dummy variables to distinguish each individual in a data set is necessary to implement the method. The coefficient of each individual's dummy variables produced upon analysis is an estimate of the unobserved time-invariant variables. Nevertheless, Wooldridge (2009) argued that this method was not practical for panel data sets with many cross-sectional observations. In addition, Allison (2009) pointed out that this method may be beyond the capacity of accounting software because the computational requirement to estimate coefficients for all the dummy variables is very complex. The mean deviation method is an alternative algorithm. For each individual and for each time-varying variable, the means over time are computed for the individual. Subsequently, the individual-specific means is subtracted from the observed values of each variable. This method is not able to estimate coefficients for time-invariant predictors. This characteristic is evident from the fact that subtracting the individual-specific mean of a time-invariant variable from the individual values yields a value of zero for all individuals. Accordingly, the time constant explanatory variables are dropped out of the equation, however their effects are still controlled (Allison, 2009).

4.11.2 Random effects model

An advantage of random effects over fixed effects is that time constant explanatory variables are allowed. This is because the random effects model assumes that the unobserved variable is uncorrelated with each explanatory variable, regardless of whether they are fixed over time (Wooldridge, 2009). This approach is appropriate when drawing some individuals randomly from a large population to make inferences about the characteristics of the population (Jager, 2008). Allison (2009) suggested that random effects model do not really control for unobserved heterogeneity because it assumes no correlation between the unobserved variables and the observed variables. This model is the simpler model compared with fixed effects model and will lead to more efficient estimates. However, if the assumptions of the model do not hold, these estimates may be biased (Allison, 2009).

4.11.3 Hausman specification test

Given the advantages and disadvantages of the above two models, it would be useful to have a statistical test to compare the random effects and fixed effects models. The test should be able to determine whether the biases inherent in the random effects approach are small enough to ignore, or whether the less restrictive fixed effects model is more appropriate (Allison, 2009). Hausman test of the null hypothesis that the random effects model estimates are identical to the fixed effects estimates is such a test.

Recall that the fixed effects model assumes that the unobserved variable is correlated with each explanatory variable while the random effects assume no correlation. Therefore, the following two hypotheses need to be tested:

H0: Unobserved variable is uncorrelated with each explanatory variable

H1: Unobserved variable is correlated with each explanatory variable

The null hypothesis H0 predicts the employment of random effects model while H1 predicts the use of fixed effects model. If a significant p-value is produced by the Hausman test, the

null hypothesis is not supported, showing some evidence against the random effects model and in favour of the fixed effects model. Hausman tests are performed for conservatism and performance models. In all models, the Hausman tests are significant and thus reject the null hypothesis. Therefore, the fixed effects model was used in this thesis.

4.11.4 Diagnostic tests

Several diagnostic tests were performed on the sample data of this thesis. Following previous research (Alkdai & Hanefah, 2012), the tests for normality, extreme outliers and multicollinearity were carried out. In addition, diagnostic tests particular for the panel data, including contemporaneous correlation, heteroskedasticity and autocorrelation were also performed on the data.

Normality

Normality, which refers to the shape of the data distribution for an individual metric variable and its correspondence to the normal distribution, is the most fundamental assumption in multivariate analysis. If there is a sufficiently large deviation from normal distribution, all resulting statistical tests are invalid (Hair, Black, Babin, Anderson & Tatham, 2006).

Normality of a variable can be assessed by statistical or graphical method. Skewness and Kurtosis are two measures to describe the shape of any distribution. Kurtosis deals with the "peakedness" or "flatness" of the distribution compared to the normal distribution (Hair et al., 2006). Skewness refers to the symmetry of the distribution and a skewed variable is a variable whose mean is not in the centre of the distribution (Tabachnick & Fidell, 2007). A positive skew reflects a distribution shifted to the left while a negative skew denotes a shift to the right (Hair et al., 2006). When a distribution is normal, the values of skewness and kurtosis are zero. A reliable graphical analysis of normality is the normal probability plot, which compares the cumulative distribution of actual data values with that of a normal distribution. If a distribution is normal, the line representing the actual data distribution follows the straight diagonal line formed by the normal distribution (Hair et al., 2006).

Even though it is important to test the normality of data, the effects of sample size should be considered. According to Hair et al. (2006), larger sample sizes reduce the detrimental effects of nonnormality. The effects of significant nonnormality may be negligible for sample sizes of 200 or more. Results of the normal probability plot of models employed in this study indicate some deviation from normality. Since the sample size of this study is large, the deviation may not distort the results.

Outliers

An outlier is a case with an extreme value on a variable or a unique combination of values across several variables that make the observation stand out from the others (Hair, et al., 2006). In STATA, syntax *hadimvo* is the only command available to detect outliers. However, it may take a long time to obtain a mere dummy variable indicating which observations should be considered as outliers when use *hadimvo* on large datasets (Weber, 2010). The new *bacon* command provides a more efficient way to identify outliers in multivariate data. It runs many times faster than *hadimvo* although both commands produce similar sets of outliers. Since this thesis has large datasets, the syntax *bacon* is used to detect outliers in the data.

There are two common ways to deal with outliers. One way is to trim (i.e. remove) outliers from the dataset to allow for more robust statistical analysis. Another way is to winsorize the data: a method to assign outliers the next highest or lowest value found in the sample that is not an outlier ("Dealing with outliers", 2012). A typical winsorizing strategy is to set outliers to a specific percentile of data. In winsorizing, the outliers are replaced and thus the sample size remains the same and power is unaffected (Lusk, Halperin & Heilig, 2011). To avoid the reduction of sample size, the method of winsorizing is used to deal with outliers in this thesis. Winsorizing greater than 5% may affect the outcome results; therefore variables should be winsorized no more than 5%.

Multicollinearity

Multicollinearity occurs when independent variables are too highly correlated (Tabachnick & Fidell, 2007). The problem of multicollinearity exists when the correlation among

independent variables is 0.9 or above. In addition to the correlation value, the test of the variance inflation factor (VIF) for the independent variable can be used to test the presence of multicollinearity. VIF command is available in STATA to check for multicollinearity. In general, a variable with VIF value over 10 suggests the existence of multicollinearity. However, VIF command is only available after *regress*, but not after *xtreg* which is used to test panel data regression. Alternatively, *Collin* command which does not need to be run with a *regress* command can be adopted to perform collinearity diagnostics for panel data.

Cross-sectional dependence

An increasing panel-data literature indicates that panel data models are likely to have substantial cross-sectional dependence in the errors, which may arise because of the presence of common shocks and unobserved components (Hoyos & Sarafidis, 2006). If left untreated, cross sectional dependence could cause bias and inconsistency estimation (Bai & Kao, 2006). According to Hoyos (2006), there are three statistical procedures available to test for cross-sectional dependence for large N and small T panels: Pesaran's (2004) cross-sectional dependence test, Friedman's (1937) statistics and the test statistic proposed by Frees (1995). In this thesis, Pesaran's test is employed. Accordingly, syntax *xtcsd, pesaran* is performed for Pesaran's cross-sectional dependence test in STATA.

Heteroskedasticity

Homoskedasticity refers to the assumption that dependent variables have equal levels of variance across the range of explanatory variables (Hair et al., 2006). If the variance is unequal across values of explanatory variable, then the situation is known as heteroskedasticity. Homoskedasticity is important because the variance of the dependent variable should not be dominant in only a limited range of the explanatory values (Hair et al., 2006). However, the assumption of homoskedasticity is restrictive for panel data where the cross-section units may be of varying size and thus may have different variation (Baltagi, 2005). With the presence of heteroskedasticity, consistent estimates of the regression coefficients can still be produced; nevertheless, these estimates are inefficient and the standard errors of the estimates will be biased (Baltagi, 2005). Wald test can be used to

detect the problem of heteroskedasticity and the test can be performed through syntax *xttest3* in STATA. If heteroskedasticity exists in models, robust standard errors correcting for heteoskedasticity should be computed.

Autocorrelation

Autocorrelation also called lagged correlation or serial correlation refers to the correlation of a time series with its own past and future values (Wooldridge, 2002). In a panel data set, the serial correlation is likely to have a more substantial influence on the estimated covariance matrix of the least squares estimator than heteroskedasticity (Greene, 2008). According to Drukker (2003), a new test for serial correlation in the panel data model produced by Woodridge (2002) is very attractive since it requires relatively few assumptions and implements easily. This test can be performed using *xtserial* syntax in STATA to test serial correlation.

This thesis did not examine endogeneity because the panel data methodology used in this thesis mitigates the concerns of an endogeneity problem as the standard errors are corrected for cross sectional dependence, heterogeneity and autocorrelation (Yunos, 2011). Himmelberg, Hubbard and Palia (1999) also mentioned that panel data with a fixed effect effectively eliminates the endogeneity problem.

4.12 Conclusion

This chapter discusses the sample and data selection, measurement of all variables and research design used to test the hypotheses of this thesis. A sample of 969 Chinese listed companies over a four-year period is selected and information for all variables is retrieved from companies' annual reports and Datastream.

There are three groups of variables in the regression models: conservatism, corporate governance variables and firm performance. Two measures of conservatism, namely asymmetric timeliness and accrual-based are adopted. In terms of corporate governance

variables, the characteristics of board of directors and supervisory board are examined. The characteristics of board of directors investigated in this thesis include board independence, board size, board meetings, CEO duality and top management turnover. Four characteristics of supervisory boards employed are independence of supervisory board, size and meetings of the board and supervisory board qualification. Two accounting-based measures— ROE and net profit margin and one market-based measure— MTB, are used to measure firm performance. Furthermore, in the test of moderating effect, ownership structure is identified by ownership concentration and state ownership.

Panel data methodology is used to test the hypotheses in this thesis. Therefore, in addition to the diagnostic tests of normality, outliers and multicollinearity, three diagnostic tests particularly on panel data, that is, cross sectional dependence, heteroskedasticity and autocorrelation are performed.

Chapter Five: Results and Discussion

5.1 Introduction

The regression models and the research design to test the hypotheses were introduced in Chapter Four. Based on the models, this chapter presents the findings of this study, as follows: section 5.2 presents the descriptive statistics for corporate governance, conservatism and firm performance variables; section 5.3 reports the Pearson and Spearman correlation analysis; Section 5.4 contains discussion of the results of the multiple regression models; Section 5.5 provides the results of several additional analyses; Section 5.6 summarises the overall findings.

5.2 Descriptive statistics

Table 5.1 shows the descriptive statistics of the full sample of 3,876 firm-year observations on all variables. The mean value of the accrual-based conservatism measure (CONACCR) is -0.014, which is lower than the mean value reported in the US studies produced by Ahmed and Duellman (2007) and Krishnan and Visvanathan (2008). This suggests that the level of conservative accounting in China is lower than that in the US. The unique characteristic of Chinese companies, such as ownership concentration and state ownership, may be the reason for this difference. In addition, the mean value of CONACCR is lower than that showed in Yunos, Smith and Ismail's (2011) study which examined conservatism in Malaysian companies. This indicates that the level of conservatism in China is also lower than that in some of other emerging economies. The mean value of earnings price ratio (E/P) is 1.308, with a range from -1.267 to 71.525, and the mean and median of share return (R) are 0.620 and 0.586 respectively. Consistent with the study conducted by Kung et al. (2010), both E/P

and R are right-skewed (means exceed medians), indicating a low level of earnings conservatism for the sample companies[4].

Table 5.1 Descriptive Statistics

Variables	Median	Mean	Std. Dev.	Min	Max
CONACCR	-0.014	-0.014	0.131	-4.664	2.229
E/P	0.032	1.308	0.043	-1.267	71.525
R	0.586	0.620	0.546	-1.218	2.809
SHARE	0.321	0.344	0.149	0.035	0.852
ST	0.275	0.272	0.222	0.000	0.869
BID	0.333	0.362	0.050	0.143	0.667
BS	9.000	9.167	1.853	4.000	18.000
BM	9.000	9.245	3.601	2.000	36.000
SBID	0.000	0.131	0.193	0.000	0.600
SBS	3.000	3.975	1.281	2.000	12.000
SBM	4.000	4.762	1.644	0.000	16.000
SBQ	0.333	0.321	0.251	0.000	1.000
ROE	0.067	0.078	0.801	-9.912	33.831
PM	0.048	0.068	1.721	-56.548	58.959
SGROW	0.112	0.236	1.555	-1.000	58.357
MTB	2.515	4.512	116.542	-1674.036	6979.176
TA (RMB'000)	2,315,310	4,978,064	14,809,280	23,259	443,466,300
ROA	0.028	0.029	0.184	-2.746	7.696
LEV	0.049	0.114	0.239	0.000	5.179
Dummy Variables					
CEODUO=1 (CEO-Chairman roles are combined): 12.82%					
TURN=1 (Top management is changed): 10.89%					

CONACCR= Accrual-based conservatism, E/P= Earnings price ratio, R= Annual share return, SHARE= Largest shareholdings, ST= State ownership, BID= Board independence, BS= Board size, BM= Board meetings, SBID= Supervisory board independence, SBS=

[4] Ball (2001) stated that under asymmetric conservatism, accounting income should be negatively skewed (all medians exceed means) and share returns should be positively skewed (all means exceed medians). The negative skew of accounting income indicates accounting conservatism because conservatism tends to incorporate economic losses as larger but less frequent capitalized amounts and to incorporate economic gains as smaller but persistent flows over time.

Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, ROE= Return on equity, PM= Profit margin, SGROW= Sales growth, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed.

The descriptive statistics for corporate governance variables show that the mean of the largest shareholdings is 34.4% and the mean of state ownership is 27.2%. According to the China Securities Regulatory Commission (CSRC), 30% is a meaningful threshold to define control. Using this definition, regardless of the ownership type, the majority of listed companies (54.98%) are controlled by the largest shareholders. This finding is consistent with Chinese studies, conducted by Liu and Lu (2007). On average in China, the state controls 27.2% of the shares of listed companies, varying from 0% to 86.9%. Compared with previous studies based on Chinese companies (Lin et al., 2009; Kung et al., 2010; Sun et al, 2002), the mean values of the largest shareholder and state ownership are slightly lower. However, the values are still very high, indicating that ownership of Chinese listed companies is concentrated and the state is still an important shareholder.

The mean value of board independence (BID) is 36.2%, indicating that Chinese listed companies have complied with the recommendation of CSRC that requires listed companies to ensure that one-third of directors are independent. However, the minimum value of BID (14.3%) suggests that some companies breached the requirement, although it is a mandatory one. The mean value of BID in this study is higher than that in previous Chinese studies (Wei, 2007; Shan & McIver, 2011), indicating that more companies in this sample have complied with the recommendation. The average board size of the sample is nine directors, ranging from 4 members to 18 members. Consistent with the findings of Yang et al. (2008) that a majority of boards in Chinese listed companies consisted of 9 or 11 directors, 64.68% of the observations in this study have boards of 9 or 11 members. The board of directors in the sample companies hold an average of nine meetings per year, with the most frequent being 36 meetings annually. Based on firm-year observations, most boards (95.87%) met more than four times a year, which shows that the board of directors plays an active role in most Chinese listed companies. The occurrence of CEO duality is low (12.82%) in this sample, reflecting that most companies adopted the CSRC's recommendation to separate the

CEO and chairman roles. The percentage of CEO duality is much less than that in the US, (Krishnan & Visvanathan, 2008; Goyal and Park, 2002) but similar to that of the UK and Australia, where companies are also encouraged to separate the two roles. The statistics shows that 10.89% of the observations experienced forced top management turnover in the sample years.

The mean value of 13.1% in terms of supervisory board independence indicates that supervisory boards in the sample companies were dominated by insiders. The median zero value reflects that more than 50% of companies appointed no independent members on the board of supervisors. Moreover, the supervisory boards, which have an average size of only three members, are much smaller than the size of board of directors. The supervisory boards also hold fewer meetings than the boards of directors, indicating a less active role. The proportion of professional supervisors ranges between 0% and 100%, with the average being 32.1%. This finding indicates that some companies did not follow the Code issued by CSRC (2002) to include professional supervisors on the board since it is not a mandatory requirement. An analysis of the sample companies shows that 949 (24.5%) firm-year observations did not appoint supervisors with professional knowledge or relevant working experience.

The average total assets of Chinese listed companies is 4,978 million RMB. The size of companies varies from a minimum of 23 million RMB to a maximum of 443,466 million RMB. The mean values of sales growth and market to book ratio (MTB), the proxy for the companies' growth opportunities, are 0.236 and 4.512 respectively. In terms of the two accounting-based measures of firm performance, the sample has an average profit margin (PM) of 6.8% and return on equity (ROE) of 7.8%. MTB is also used as an alternative measure of firm performance.

From the above Table 5.1, it can be seen that some variables have extreme figures. After running the syntax *bacon* in STATA, the outliers were also detected. These extreme figures were investigated further to ensure that they are not a result of data entry mistakes. In order to limit the effects of outliers, all continuous variables are winsorized at top and bottom 5%. Table 5.2 shows the descriptive statistics of variables after winsorization.

Table 5.2 Descriptive Statistics of continuous variables after winsorization

Variables	Median	Mean	Std. Dev.	Min	Max
CONACCR	-0.014	-0.015	0.043	-0.102	0.072
E/P	0.032	0.036	0.043	-0.041	0.130
R	0.586	0.620	0.546	-1.218	2.809
SHARE	0.321	0.342	0.140	0.134	0.609
ST	0.275	0.269	0.217	0.000	0.618
BID	0.333	0.360	0.038	0.333	0.444
BS	9.000	9.076	1.497	6.000	12.000
BM	9.000	9.128	3.009	5.000	16.000
SBID	0.000	0.128	0.184	0.000	0.600
SBS	3.000	3.911	1.078	3.000	6.000
SBM	4.000	4.751	1.343	3.000	8.000
SBQ	0.333	0.310	.228	0.000	0.667
ROE	0.067	0.071	0.115	-0.217	0.294
PM	0.048	0.060	0.114	-0.222	0.310
SGROW	0.112	0.134	0.288	-0.378	0.810
MTB	2.519	3.312	2.573	0.456	10.301
TA (RMB'000)	2,315,310	3,834,378	4,097,265	363,664	16,078,860
ROA	0.028	0.030	0.050	-0.093	0.130
LEV	0.049	0.097	0.111	0.000	0.376

CONACCR= Accrual-based conservatism, E/P= Earnings price ratio, R= Annual share return, SHARE= Largest shareholdings, ST= State ownership, BID= Board independence, BS= Board size, BM= Board meetings, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, ROE= Return on equity, PM= Profit margin, SGROW= Sales growth, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

Some empirical studies (La Porta, Lopez-de-Silanes & Shleifer, 1999; Ahmed, 2009) have determined a company as having concentrated ownership if there is a single controlling owner holding more than 20% of the shares. However, as mentioned above, provision 84 in Chapter 10 of CSRC (2008) used 30% share ownership to define control for Chinese companies. Therefore, in this thesis, companies in which the largest shareholders hold more than 30% of shares are labelled as having concentrated ownership. Table 5.3 shows the number and percentage of observations with dispersed and concentrated ownership. Based on

the analysis of the full sample, 45.02% of observations are classified as dispersed ownership, while the remaining 54.98% had concentrated ownership. The yearly distributions show that the majority of companies have concentrated ownership in all sample years. Furthermore, this thesis examines whether the largest shareholder is the state. According to Cullinan et al. (2012), if the largest shareholder of a company is the state, then this company is classified as a state controlled company. In this study, 61.20% of companies are state controlled.

Table 5.3 Number and percentage of observations based on ownership concentration

	Dispersed ownership		Concentrated ownership		State controlled companies	
	No.	Percent	No.	Percent	No.	Percent
Full sample (N=3,876)	1,745	45.02%	2,131	54.98%	2,372	61.20%
2007 (N=969)	428	44.17%	541	55.83%	596	61.51%
2008 (N=969)	423	43.65%	546	56.35%	594	61.30%
2009 (N=969)	438	45.20%	531	54.80%	589	60.78%
2010 (N=969)	456	47.06%	513	52.94%	593	61.20%

To examine whether there are any differences in conservatism and firm performance between companies with dispersed ownership and companies with concentrated ownership, a t-test was performed and table 5.4 (Panel A) presents the results. Following Yunos (2011), a t-test was performed only for accrual-based conservatism (CONACCR), not for asymmetric timeliness since the latter is not a firm specific measure. The means of CONACCR and three measures of firm performance (ROE, PM and MTB) between the two groups were compared to test the null hypotheses that there is no difference between the means.

Table 5.4 Mean difference on accrual-based conservatism and firm performance

Panel A: Dispersed vs. Concentrated ownership

	Mean of CONACCR	t-statistic	Mean of ROE	t-statistic	Mean of PM	t-statistic	Mean of MTB	t-statistic
Disp. ownership	-0.010		0.055		0.053		3.445	
Concen. ownership	-0.020	6.956***	0.083	-7.597***	0.065	-3.343***	3.202	2.923***

Panel B: State controlled vs. Non-state controlled

	Mean of CONACCR	t-statistic	Mean of ROE	t-statistic	Mean of PM	t-statistic	Mean of MTB	t-statistic
State controlled	-0.015		0.070		0.057		3.204	
Non-state controlled	-0.015	0.214	0.070	-0.051	0.063	1.395	3.481	3.265***

***p<0.01; **p<0.05

As table 5.4 (Panel A) shows, the mean value of CONACCR of companies with dispersed ownership (-0.010) is higher than that of companies with concentrated ownership (-0.020). This suggests that companies without controlling shareholders employed more conservatism than their counterparts, and the difference is significant. In terms of firm performance, the ROE and PM measures indicate that companies with concentrated ownership have better performance and the differences are significant. In contrast, based on the MTB measure, the results show that companies with dispersed ownership have better performance. This thesis also split companies into state- controlled companies and non-state-controlled companies. Table 5.4 (Panel B) presents the comparison for conservatism and firm performance between the two groups of companies, which show that there is little mean difference of CONACCR between state-controlled companies and non-state-controlled companies. This reflects that, based on the accrual-based measure, state-controlled companies adopted the same level of conservatism as their counterparts. Similarly, the mean differences of ROE and PM for the two groups of companies are also minor and not statistically different. However, when MTB is used to measure firm performance, the results indicate that non-state-controlled companies appear to perform better than state-controlled companies and the difference is significant.

5.3 Correlation analysis

The correlation coefficient was computed to explore the relationship between the variables before conducting the regression and examining the issue of multicollinearity. Table 5.5 shows the correlation matrix between dependent, independent and control variables except for the industry dummies. Following Duellman (2006), the Pearson correlations are presented below the diagonal, and the Spearman correlations are shown above the diagonal. The Pearson correlation is based on the assumption that variables are normally distributed, whereas the Spearman correlation makes no assumption about the distribution of the data.

Table 5.5 Pearson (Spearman) Correlations below (above) the diagonal

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1 CONACCR	1	**-0.39**	**0.05**	**-0.11**	**-0.25**	**-0.20**	**-0.12**	-0.00	0.01	**-0.04**	**-0.08**	**0.05**	**0.09**	**0.06**	-0.01	**-0.06**	-0.03	**-0.21**	**-0.24**	**-0.16**	0.00	**-0.07**
2 E/P	**-0.37**	1	**-0.10**	**0.23**	**0.50**	**0.31**	**0.20**	**0.08**	**-0.06**	**0.15**	**0.07**	**-0.11**	**-0.15**	**-0.10**	**0.10**	**0.04**	**0.05**	**0.49**	**0.44**	**0.25**	**-0.25**	**0.16**
3 D	**0.04**	**-0.09**	1	**-0.54**	**-0.08**	**-0.04**	0.02	0.01	0.03	0.00	**-0.04**	-0.02	0.03	0.03	-0.00	-0.00	0.00	**0.10**	**-0.09**	-0.01	-0.03	**0.07**
4 R	**-0.12**	**0.24**	**-0.56**	1	**0.25**	**0.17**	0.02	-0.02	**-0.04**	**0.03**	**0.16**	0.01	**-0.07**	-0.01	0.02	0.02	-0.01	-0.03	**0.23**	**0.13**	**0.09**	**-0.06**
5 ROE	**-0.24**	**0.45**	**-0.06**	**0.24**	1	**0.64**	**0.15**	**0.04**	**-0.04**	**0.08**	**0.07**	**-0.05**	**-0.21**	**-0.04**	**0.03**	**0.06**	**0.05**	**0.27**	**0.81**	**0.34**	-0.02	0.01
6 PM	**-0.19**	**0.28**	-0.01	**0.13**	**0.58**	1	**0.07**	-0.03	0.00	0.02	**0.08**	-0.01	**-0.19**	0.01	-0.01	**0.05**	**0.04**	**0.14**	**0.81**	**0.20**	**-0.04**	**0.07**
7 SHARE	**-0.13**	**0.19**	0.02	0.02	**0.16**	**0.09**	1	**0.52**	-0.02	0.02	-0.02	**-0.13**	-0.02	**-0.15**	**0.06**	**0.06**	**0.08**	**0.24**	**0.11**	**0.10**	-0.03	**0.04**
8 ST	-0.01	**0.08**	0.01	-0.02	**0.04**	0.01	**0.53**	1	-0.03	**0.20**	**-0.09**	**-0.14**	-0.00	**-0.11**	**0.24**	0.01	**0.11**	**0.22**	-0.00	**0.05**	-0.03	**0.08**
9 BID	0.01	**-0.07**	0.03	**-0.04**	-0.03	0.03	-0.01	**-0.04**	1	**-0.26**	0.02	**0.04**	0.02	**0.04**	**-0.06**	-0.03	**-0.08**	-0.00	-0.03	0.01	0.02	-0.01
10 BS	**-0.05**	**0.15**	-0.00	**0.04**	**0.07**	**0.03**	0.02	**0.20**	**-0.37**	1	-0.03	**-0.11**	-0.03	-0.03	**0.30**	0.00	**0.04**	**0.24**	**0.06**	**0.06**	**-0.04**	**0.10**
11 BM	**-0.10**	**0.06**	**-0.04**	**0.15**	**0.06**	**0.10**	-0.03	**-0.10**	0.02	-0.02	1	-0.02	**0.09**	**0.03**	-0.01	**0.31**	0.01	**0.16**	**0.04**	**0.05**	0.00	**0.12**
12 CEODUO	**0.06**	**-0.11**	-0.02	0.01	**-0.05**	-0.03	**-0.12**	**-0.14**	**0.04**	**-0.12**	-0.01	1	-0.01	0.01	**-0.08**	-0.01	**-0.04**	**-0.10**	-0.03	**-0.04**	0.02	**-0.06**
13 TURN	**0.09**	**-0.14**	0.03	**-0.07**	**-0.19**	**-0.20**	-0.01	-0.00	0.02	-0.03	**0.08**	-0.01	1	0.00	-0.01	**0.05**	-0.01	**-0.06**	**-0.25**	**-0.09**	-0.03	0.02
14 SBID	**0.07**	**-0.09**	**0.03**	-0.02	**-0.04**	0.02	**-0.15**	**-0.13**	**0.04**	**-0.05**	**0.04**	0.01	0.00	1	**0.08**	-0.00	-0.01	**-0.10**	-0.03	0.00	0.01	-0.02
15 SBS	-0.00	**0.10**	-0.00	0.02	0.03	0.01	**0.06**	**0.24**	**-0.09**	**0.30**	-0.02	**-0.08**	-0.01	0.02	1	0.02	**0.09**	**0.20**	0.00	**0.05**	**-0.05**	**0.09**
16 SBM	**-0.05**	0.03	-0.01	**0.04**	**0.05**	**0.05**	**0.06**	0.02	-0.03	0.02	**0.31**	-0.01	**0.04**	0.00	0.03	1	0.02	**0.09**	**0.05**	**0.04**	0.03	0.02
17 SBQ	**-0.03**	**0.05**	0.00	0.01	**0.05**	**0.04**	**0.07**	**0.10**	**-0.07**	**0.05**	0.02	**-0.04**	-0.02	-0.02	**0.08**	0.02	1	**0.05**	**0.04**	0.02	-0.01	**0.04**
18 TA	**-0.22**	**0.47**	**0.10**	-0.02	**0.25**	**0.16**	**0.26**	**0.23**	-0.03	**0.24**	**0.17**	**-0.11**	**-0.06**	**-0.13**	**0.20**	**0.08**	**0.05**	1	**0.15**	**0.20**	**-0.24**	**0.35**
19 ROA	**-0.24**	**0.41**	**-0.07**	**0.22**	**0.75**	**0.81**	**0.13**	0.02	-0.02	**0.05**	**0.03**	**-0.04**	**-0.25**	**-0.03**	0.01	**0.05**	**0.03**	**0.17**	1	**0.31**	-0.01	**-0.08**
20 SGROW	**-0.15**	**0.23**	-0.01	**0.13**	**0.31**	**0.20**	**0.09**	**0.04**	0.02	**0.04**	**0.06**	**-0.04**	**-0.08**	0.01	0.02	**0.05**	0.03	**0.18**	**0.29**	1	0.01	**0.07**
21MTB	**0.04**	**-0.29**	**-0.03**	**0.09**	**-0.09**	**-0.09**	-0.03	**-0.04**	0.03	**-0.05**	-0.01	0.03	0.00	0.03	**-0.05**	0.01	-0.02	**-0.27**	**-0.07**	-0.03	1	**-0.17**
22 LEV	**-0.06**	**0.14**	**0.10**	**-0.08**	-0.02	**0.06**	**0.06**	**0.07**	-0.01	**0.09**	**0.07**	**-0.05**	0.01	-0.02	**0.07**	0.02	**0.04**	**0.29**	**-0.08**	**0.06**	**-0.14**	1

Correlations in **bold** represent significance at 5% or less

For board attributes, the results of the correlation analysis show that board size (BS), board meetings (BM), CEO duality (CEODUO) and top management turnover (TURN) are significantly correlated with CONACCR. The negative relationship between BS and CONACCR is consistent with the hypothesis that a larger board is less effective and thus adopts less conservatism. However, the coefficient signs on BM, CEODUO and TURN are contrary to expectations. In terms of supervisory boards, the positive sign between supervisory board independence (SBID) and CONACCR confirms the argument that a supervisory board with more independent members employs more conservatism. However, contrary to expectations, the significantly negative coefficient signs on supervisory board meetings (SBM) and supervisory board qualification (SBQ) indicate that supervisory boards with more meetings and professional members have less accrual-based conservatism. All control variables: firm size (TA), profitability (ROA), sales growth (SGROW) and leverage (LEV) are significantly associated with CONACCR. Because the asymmetric timeliness conservatism is based on the notion that share price reacts to the release of information on earnings (Mohanmmed, 2011), consistent with expectations, the dummy (D) for negative returns and share returns (R) is significantly negative and positively correlated with earnings (E/P) respectively.

In terms of characteristics of the two boards, BS is significantly correlated with all measures of firm performance (ROE, PM and MTB). The effect of BS on ROE and PM is positive while its effect on MTB is negative. In other word, the effect of BS on firm performance is consistent with the prediction when MTB is used to measure performance.

The largest shareholdings (SHARE) are significantly positively related to supervisory board size (SBS), supervisory board meetings (SBM) and supervisory board qualification (SBQ), but inversely correlated with CEO duality (CEODUO) and supervisory board independence (SBID). The positive coefficients indicate that companies with more concentrated ownership are more likely to have larger supervisory boards, hold more supervisory board meetings and include more professional supervisors. The negative coefficients, however, suggest that the higher the proportion of largest shareholdings, the less likely for the company to combine the CEO and chairman roles, and the lower, the proportion of independent supervisors. The

positive association between SHARE and total assets (TA) shows that ownership concentration is dominant in larger companies.

State ownership (ST) is significantly positively correlated to one board attribute— board size (BS), but negatively associated with board independence (BID), board meetings (BM) and CEO duality (CEODUO). This evidence indicates that the higher the proportion of state ownership, the larger the board size, the lower the proportion of independent directors, the less frequently the board meets and the less likely it is for the company to combine the CEO and chairman roles. Similar to the largest shareholdings, ST is positively correlated with supervisory board size (SBS) and supervisory board qualification (SBQ), suggesting that companies with greater state ownership have fewer supervisory boards and are more likely to appoint professional supervisors. Moreover, the coefficient between ST and supervisory board independence (SBID) is significantly negative, which reflects that companies with greater state ownership have fewer independent members on their supervisory boards. The positive relationship between ST and TA suggests that the large companies have greater state ownership.

Overall, a number of independent variables are significantly correlated. For instance, as the dummy (D) for negative returns is originally derived from returns, it is highly correlated with the return (R) variable. However, the presence of the two variables in models does not suggest a problem of multicollinearity because the absolute correlation magnitude is not more 0.9 (Tabachnick & Fidell, 2007). Table 5.5 shows that the highest correlation is between return on assets (ROA) and net profit margin (PM) at 0.81. Therefore, the problem of multicollinearity is not found between the independent variables in the sample of this study. In addition to the correlation matrix, the test on the variance inflation factor (VIF) is performed to detect multicollinearity. The VIF test ran on the independent variables is shown in Appendix A and the highest VIF is 1.61 for state ownership (ST). As described in Chapter Four, VIF that is over 10 reflects a collinearity problem. Thus, the VIF test confirms that there is no multicollinearity problem among the independent variables.

Although correlation analysis shows some relationship between the variables, the analysis should be interpreted with caution because the correlations do not indicate the joint effect of

variables and are subject to omitted variables bias (Duellman, 2006). Therefore, a multivariate analysis was performed to examine the relationship tested after controlling for variables that are likely to affect the association.

5.4 Multivariate analysis

To investigate the relationship between individual corporate governance variables and conservatism, two sets of regression models using two measures of conservatism are employed. In addition to the conservatism regression models, models that test the effect of corporate governance and conservatism on firm performance are adopted.

5.4.1 Accrual-based conservatism (CONACCR)

The following empirical model is employed to identify the effects of characteristics of board of directors and characteristics of supervisory board on accrual-based conservatism.

(1) $CONACCR_{it} = \beta_0 + \beta_1 BID_{it} + + \beta_2 BS_{it} + \beta_3 BM_{it} + \beta_4 CEODUO_{it} + \beta_5 TURN_{it} + \beta_6 SBID_{it} + \beta_7 SBS_{it} + \beta_8 SBM_{it} + \beta_9 SBQ_{it} + \beta_{10} Firm\ size_{it} + \beta_{11} Sales\ growth_{it} + \beta_{12} Profitability_{it} + \beta_{13} Leverage_{it} + \beta_{14} Industry_{it} + \varepsilon_{it}$

The diagnostic tests on CONACCR indicate the presence of cross sectional dependence, heteroskedasticity and autocorrelation. Although many empirical studies have provided standard error estimates that are heteroskedasticity and autocorrelation consistent, cross sectional dependence is still largely ignored (Hoechle, 2007). Driscoll and Kraay (1998) proposed a nonparametric covariance matrix estimator that is robust to heteroskedasticity, autocorrelation and cross sectional dependence. Therefore, fixed-effects regression models with Driscoll and Kraay's standard errors are employed in this thesis, which can be performed using *xtscc* syntax in STATA. Table 5.6 presents the results of fixed effect regression for CONACCR. The industry variable is omitted by STATA because it is a time invariant variable; however, its effect has been controlled.

Table 5.6 Regression results of accrual-based conservatism

Variables	Predicted sign	Coefficients	t-statistics
Constant		0.096	**1.85***
BID	+	0.005	0.37
BS	-	-0.002	-0.95
BM	+	-0.000	-1.39
CEODUO	-	0.006	**3.42*****
TURN	+	0.002	**2.44****
SBID	+	-0.004	-0.68
SBS	-	0.004	**2.43****
SBM	+	0.000	0.08
SBQ	+	0.005	**4.18*****
TA	-	-0.005	**-1.94***
SGROW	-	0.001	**2.54****
ROA	+	-0.063	**-2.50****
LEV	+	-0.027	**-4.19*****
F-value			**16.53*****
R^2 within			0.0159
N			3876

*****p<0.01; ****p<0.05**; ***p<0.10**

BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= CEO duality, TURN= Top management turnover, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, TA= Total assets, SGROW= Sales growth, ROA= Return on assets, LEV= Leverage

5.4.2 Asymmetric timeliness (AT) conservatism

The following regression model is employed to examine the effects of characteristics of the board of directors and supervisory board on asymmetric timeliness conservatism. Independent variables in the asymmetric timeliness model are similar to those in the accrual-based conservatism model, except sales growth (SGROW) is replaced by market to book ratio (MTB).

(2) $E_{it}/P_{it-1} = \beta_0 + \beta_1 R_{it} + \beta_2 D_{it} + \beta_3 R_{it}*D_{it} + \beta_4 BID_{it} + \beta_5 R_{it}*BID_{it} + \beta_6 D_{it}*BID_{it} + \beta_7 R_{it}*D_{it}*BID_{it} + \beta_8 BS_{it} + \beta_9 R_{it}*BS_{it} + \beta_{10} D_{it}*BS_{it} + \beta_{11} R_{it}*D_{it}*BS_{it} + \beta_{12} BM_{it} + \beta_{13} R_{it}*BM_{it} + \beta_{14} D_{it}*BM_{it} + \beta_{15} R_{it}*D_{it}*BM_{it} + \beta_{16} CEODUO_{it} + \beta_{17} R_{it}*CEODUO_{it} + \beta_{18} D_{it}*CEODUO_{it} + \beta_{19} R_{it}*D_{it}* CEODUO_{it} + \beta_{20} TURN_{it} + \beta_{21} R_{it}*TURN_{it} + \beta_{22} D_{it}*TURN_{it} + \beta_{23} R_{it}*D_{it}*TURN_{it} +$ *supervisory board attributes and control variables* $+ \varepsilon_{it}$

As described in section 4.6.1, this thesis uses a three year measure of earnings and returns as suggested by Roychowdhury and Watts (2007). The regressions were also run using one-year estimates of asymmetric timeliness following Basu's (1997) original model and the results are shown in Appendix B, column (a). Compared with the model based on three-year estimates, less significant findings are found for the model using a one-year estimate. The asymmetric timeliness model also has problems of cross sectional dependence, heteroskedasticity and autocorrelation. Thus Driscoll and Kraay's (1998) method is used to correct standard errors.

Explanatory variables that interact with R (e.g. BID*R) reflect their timeliness in recognising good news into earnings. Variables that interact with RD (e.g. BID*RD) reflect the incremental effect of recognizing bad news relative to good news into earnings, i.e. asymmetric timeliness. Therefore, if the variable results in more conservatism, the coefficient on its interaction with R is expected to be negative and coefficient on its interaction with RD is expected to be positive. The primary concern of this analysis is the coefficient on RD, which indicates the degree of conservatism (Shuto & Takada, 2010). Due to the lengthy list of interactions, Table 5.7 only presents the interactions of independent variables with R and RD. The full list of the interactions is shown in Appendix B, column (b).

Table 5.7 Results of asymmetric timeliness

Variables	Predicted signs	Coefficients	t-statistic
BID*R	-	-0.012	-0.93
BID*RD	+	0.116	**2.58****
BS*R	+	0.009	**2.09****
BS*RD	-	0.043	**2.86*****
BM*R	-	-0.000	-1.19
BM*RD	+	-0.001	-0.88
CEODUO*R	+	-0.004	**-6.22*****
CEODUO*RD	-	-0.007	-0.96
TURN*R	-	-0.003	-1.14
TURN *RD	+	-0.023	**-3.90*****
SBID*R	-	0.010	**4.57*****
SBID*RD	+	0.016	1.39
SBS*R	+	-0.001	-0.89
SBS*RD	-	-0.033	**-17.51*****
SBM*R	-	-0.001	**-4.01*****
SBM*RD	+	-0.001	-0.17
SBQ*R	-	-0.006	**-4.39*****
SBQ*RD	+	0.026	**1.98****
TA*R	+	0.004	**2.36****
TA*RD	-	-0.002	-0.49
ROA*R	-	0.007	0.62
ROA*RD	+	-0.124	**-1.89***
MTB*R	+	-0.002	**-8.00*****
MTB*RD	-	-0.002	**-3.60*****
LEV*R	-	0.015	**2.77*****
LEV*RD	+	0.029	1.07
F-value			**10.01*****
R^2 within			0.2909
N			3876

*****p<0.01; ****p<0.05; *p<0.10

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN = Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

5.4.3 Characteristics of Board of directors and conservatism (H1-H4)

As shown in Table 5.6, board independence (BID) is not significantly related to CONACCR, thus failing to support hypothesis H1a, which predicts that board independence is positively related to conservatism. This result is not consistent with the findings in the US and UK (Ahmed & Duellman, 2007; Duellman 2006; Beekes et al., 2004), where the majority of studies found a positive relationship between board independence and accounting conservatism. However, in the AT model, BID is positively related to AT (BID*RD) and is significant at the 5% level, indicating that board independence results in more conservatism based on the asymmetric timeliness measure. This finding supports the argument that board independence improves board effectiveness. Moreover, the result confirms the evidence stating that independent directors reduced abnormal accruals (Cornett et al., 2009; Peasnell et al., 2005) and were effective in monitoring corporate financial accounting process (Klein, 2002).

Board independence is not related to CONACCR, indicating that the effectiveness of board independence depends on the conservatism measures, that is, independent directors are effective in monitoring market based accounting (asymmetric timeliness) but are not effective in monitoring income statement base of accounting (CONACCR). This absence of relationship between board independence and CONACCR is inconsistent with the majority of findings in the US and UK. However, a number of studies in the Chinese context (Tian & Lau, 2001) have indicated that board independence did not affect financial reporting quality and independent directors continued to fail to meet the expectation of effective monitoring after the CSRC regulation in 2002 (Lin, 2001; Lai, 2005). The results may contribute to the appointment of government officials to the board of directors. Employing government officials as independent directors satisfies the definitions set by the regulators, but these officials who represent the government are not truly independent. Appointing governmental officials thus may threaten the independence of the board and reduce the boards' monitoring power on financial reporting quality. Moreover, since the regulation was issued in 2002, the independent director system is still developing in China. During this process, independent directors are still learning to acquire knowledge and skills to monitor management in

financial reporting. Therefore, based on accrual-based conservatism, the results conflict with evidence in developed markets but are consistent with some previous Chinese evidence.

The results of testing hypothesis H2a suggest that board size (BS) is not significantly associated with CONACCR. This finding thus fails to support the hypothesis that smaller boards result in more conservatism. In contrast, BS is significantly related to AT at the 1% level. However, contrary to expectations, the coefficient on BS*RD is positive, suggesting that larger boards lead to higher levels of conservatism. This outcome is not consistent with previous empirical research (Rahman & Ali, 2006; Vafeas, 2000; Cho & Rui, 2009) which argued that earnings in firms with smaller boards were more informative. Previous studies also showed mixed evidence on the relationship between board size and earnings quality. The mixed results could be because of the different measures of earnings quality used in these studies. Based on the CONACCR measure, the results of this study is consistent with Yunos et al. (2012) who found no relationship between board size and CONACCR. This insignificant effect is supported by Bonn et al. (2004) who argued that board size measures the factual number of directors, and does not indicate the skills and knowledge that are more important factors for board effectiveness. Based on the AT model, the results indicate that larger boards lead to higher levels of conservatism in Chinese listed companies. This may because be explained by larger boards having more experience, knowledge and opinions.

As shown in Table 5.6 and Table 5.7, the number of board meetings (BM) is not significant related to conservatism based on both the CONACCR measure and AT measure. This outcome is in contrast to hypothesis H3a that predicts a positive effect of frequency of BM on conservatism. This result suggests that higher frequency of board meetings may not necessarily increase the level of conservatism. This finding is not consistent with the prediction and the results of empirical research reported by Xie et al. (2003) and Tang and Xu (2007) that higher frequency of meetings reduced earnings management measured by discretionary current accruals and abnormal accruals. The reason for the insignificant relationship may be because directors are not able to exchange meaningful ideas among themselves or with management in the limited time (Jensen, 2003). Moreover, the number of board meetings may be increased when facing urgent business circumstances. Therefore,

Ebrahim (2007) suggested that the number of board meetings may not be an effective measure of board activity.

Contrary to expectations, CEO duality (CEODUO) is significantly positive associated with CONACCR, suggesting that the combination of CEO and chairman roles leads to more conservatism. This outcome indicates that stewardship theory which asserts a positive effect of CEO duality is supported in this thesis. The effect of CEODUO on AT (CEODUO*RD) is not significant, however, a significantly negative coefficient for CEODUO*R suggests that CEO duality leads to slower recognition of good news into earnings, consistent with conservatism practices. Therefore, Hypothesis 4a which predicts a negative relationship between CEO duality and conservatism is not supported based on both CONACCR and asymmetric timeliness measures. This result is not surprising because empirical studies on the effect of CEO duality indeed produced inconclusive results. The results of Tian and Lau (2001) and Peng et al. (2007) supported stewardship theory while the findings of Klein (2002) and Krishnan and Visvanathan (2008) supported agency theory. Moreover, there are also some studies (Ahmed & Duellman, 2007; Wang & Deng, 2006) that failed to support either theory. Although the separation of the two roles is recommended by CSRC, this thesis does not find a favourable effect of the separation on financial reports. This may be because the board is still dominated by the inside controlling shareholders and thus the separation of roles does not improve board independence.

Table 5.6 shows that top management turnover (TURN) is positively related to CONACCR and significant at the 5% level. This result is consistent with the hypothesis H5a which predicts a positive relationship between TURN and conservatism in the first year of new management's service. This evidence is consistent with the results of Pourciau (1993) and Godfrey et al. (2003) that newly appointed top management would like to adopt conservative accounting practices to decrease reported earnings in the first year of the management change. However, H5a is not supported based on AT measure since the coefficient on TURN *RD is negative and significant. This finding indicates that the effect of forced management changes depends on the conservatism measure used. Most previous evidence showed that new management would reduce reported earnings in the year of management change and increase reported earnings in the following year to show that he/she did a better job than the former

appointee. Therefore, when examining the effect of top management turnover on financial reporting, the result based on CONACCR is more consistent with most previous evidence. However, in China, Lin's (2011) finding indicated that Chinese listed firms with CEO turnover after a loss were more likely to adopt income increasing policies rather than conservative accounting practices. Lin (2011) stated that his result was different from other literature because of the unique listing requirement of Chinese Security Regulation called "special treatment (ST)". A company experiencing two consecutive years' loss will be labelled as ST, which makes its listing position vulnerable. To avoid the company being titled with ST, new management in loss making companies would not manage firms' profit downward in their first year of service. Therefore, if some companies in this sample appointed new top management after a loss, the positive relationship between top management turnover and conservatism may be influenced.

Overall, relating to characteristics of board of directors, only hypothesis H5a is supported in the CONACCR model. Based on the AT measure, only hypothesis H1a is supported while other hypotheses relating to board attributes are not supported.

5.4.4 Characteristics of supervisory board and conservatism (H6-H9)

H6a which predicts that a higher proportion of independent supervisors leads to more conservatism is not supported in either the CONACCR and AT model because the coefficients on SBID and SBID*RD are not significant. Although the effect of SBID on good news (SBID*R) is significant at the 1% level, the positive sign on the coefficient suggests that a higher proportion of independent supervisors leads to faster recognition of good news into earnings, in contrast to accounting conservatism.

Supervisory board should be independent in theory, however, in reality, due to the dominance of directors and senior managers, independent supervisors cannot perform their monitoring duty effectively. Therefore, limited research on corporate governance in China has examined the effect of the supervisory board on financial reporting or performance. Since the CSRC (2002) issued the Code to increase the power of the supervisory boards, it is expected that the effectiveness of supervisory board independence has been improved. However, the

descriptive analysis shows that, in this sample, only less than half of companies appointed independent members on supervisory board. The results of above multivariate analysis also indicate that supervisory board independence is not associated with accounting conservatism, inconsistent with the prediction. These results indicate that the effectiveness of supervisory board independence on financial reporting quality has not improved since 2002.

Smaller supervisory board size (SBS) is expected to result in more conservatism. The expectation is supported in the AT model by showing a negative coefficient on SBS*RD. However, the result based on the CONACCR measure fails to support the expectation since SBS is shown to be positively related to CONACCR, that is the bigger the board size, the more conservatism in practised. According to this result, it is difficult to determine whether a small supervisory board is better than a large board for monitoring financial reporting quality. The mixed result produced by the previous studies may also be because of the different measures of financial reporting quality.

The number of supervisory board meetings (SBM) is not associated with CONACCR, suggesting that SBM has no direct influence on CONACCR. The significant and negative coefficient on SBM*R reflects that more frequent supervisory board meetings led to slower recognition of good news. Nevertheless, the coefficient on SBM*RD is not significant. Therefore hypothesis H8a is not supported based on both the conservatism measures. This finding is not consistent with previous evidence that more active supervisory boards could improve boards' monitoring function (Jia et al., 2009) and were helpful for improving the quality of accounting information in China (Firth et al., 2007). However, the finding is consistent with Bremert and Schulten (2009) which failed to find a significant relationship between supervisory board meetings and corporate performance.

H9a, which expects that a higher proportion of professional supervisors results in more conservatism, is supported in both the CONACCR and AT models reflected by the significant and positive coefficient on SBQ and SBQ*RD. The positive relationship signifies the importance of professional knowledge for supervisors to monitor management to produce high quality financial reporting. This result supports the argument by Dahya et al. (2002) and Bremert and Schulten (2009) that the responsibilities of the supervisory board were technical

in nature and therefore the appointment of supervisors with professional knowledge or work experience was necessary for them to undertake their duties effectively. In other words, professional supervisors can understand and detect irregular issues relating to the preparation of financial reporting.

In general, in terms of hypotheses relating to characteristics of supervisory board, only H9a is supported in the CONACCR model while H7a and H9a are supported in the AT model.

5.4.5 Control variables and conservatism

All the four control variables (total assets, return on assets, growth and leverage) are significantly associated with CONACCR while only return on assets (ROA) and market to book ratio (MTB) are significantly related to AT. The significant and negative relationship between total assets (TA) and CONACCR is consistent with the expectation that larger companies adopt less conservatism. TA is not significantly related to AT but the significant positive coefficient for TA*R suggests that larger companies adopt faster recognition of good news in earnings. ROA is significantly negatively associated with both the CONACCR model and AT model, indicating that high profitability companies employ less conservatism. This finding is not consistent with the prediction that there is a positive relationship between ROA and conservatism. Contrary to expectations, sales growth (SGROW) is positively related to CONACCR and significant at the 5% level. However, MTB, which is a proxy of growth opportunity controlled in asymmetric timeliness model, is significantly negatively associated with AT. This result supports Roychowdhury and Watts's (2007) study, which claimed a negative relationship between growth opportunities and asymmetric timeliness. The positive relationship between leverage (LEV) and conservatism is not supported since LEV is significantly negatively related to CONACCR and not significantly associated with AT.

5.4.6 Corporate governance and firm performance

The following regression model is employed to test the relationship between corporate governance and firm performance. Corporate governance variables include characteristics of board of directors and characteristics of supervisory board. Return on equity (ROE), net profit margin (PM) and market to book ratio (MTB) are employed to measure firm performance. Firm size, leverage and industry are control variables in the model.

(3) $\text{Performance}_{it} = \beta_0 + \beta_1 \text{BID}_{it} + \beta_2 \text{BS}_{it} + \beta_3 \text{BM}_{it} + \beta_4 \text{CEODUO}_{it} + \beta_5 \text{TURN}_{it} + \beta_6 \text{SBID}_{it} + \beta_7 \text{SBS}_{it} + \beta_8 \text{SBM}_{it} + \beta_9 \text{SBQ}_{it} + \beta_{10} \text{Firm size}_{it} + \beta_{11} \text{Leverage}_{it} + \beta_{12} \text{Industry}_{it} + \varepsilon_{it}$

The model is estimated based on fixed effect regression and standard errors are corrected based on Driscoll and Kraay's (1998) method due to the presence of cross-sectional dependence, heteroskedasticity and autocorrelation in this model. Table 5.8 shows the results of the regression based on the ROE measure of firm performance.

Table 5.8 Relationship between corporate governance variable and ROE

Variables	Predicted sign	Coefficients	t-statistic
constant		0.065	0.22
BID	+	-0.075	-1.21
BS	-	-0.033	**-3.38*****
BM	+	0.002	**2.55****
CEODUO	-	-0.010	-1.44
TURN	-	-0.037	**-6.22*****
SBID	+	0.008	0.96
SBS	-	-0.006	-0.38
SBM	+	0.000	0.12
SBQ	+	0.014	**3.73*****
F-value			**2.13*****
R^2 within			0.0218
N			3876

*****p<0.01; ****p<0.05; *p<0.10

BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification.

The results of Table 5.8 show that board size (BS), board meetings (BM), top management turnover (TURN) and supervisory board qualification (SBQ) are significantly related to return on equity (ROE). The coefficient signs of these variables are consistent with expectations. Thus hypotheses H2b, H3b, H5b, and H9b are supported based on the ROE measure of firm performance. Table 5.9 shows the results of regression based on the profit margin measure.

Table 5.9 Results of relationship between corporate governance variable and PM

Variables	Predicted sign	Coefficients	t-statistic
constant		0.031	0.23
BID	+	-0.010	-0.75
BS	-	-0.026	**-1.94***
BM	+	0.003	**3.33*****
CEODUO	-	-0.001	-0.22
TURN	-	-0.042	**-7.74*****
SBID	+	-0.005	-0.31
SBS	-	-0.013	**-2.76*****
SBM	+	-0.001	-0.59
SBQ	+	0.001	0.11
F-value			32.18
R^2 within			0.0318
N			3876

*****p<0.01; ****p<0.05; *p<0.10

BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification.

In terms of board attributes, as with the ROE measure, BS, BM and TURN are significantly associated with PM and the coefficient signs are consistent with expectations. For characteristics of supervisory board, supervisory board size (SBS) is not significantly associated with ROE as shown in Table 5.8 but negatively related to PM and significant at the 1% level. Therefore, hypothesis H7b that proposed smaller supervisory boards result in better firm performance is supported when PM is used to measure firm performance.

However, hypothesis H9b, which is supported using ROE measure, is not supported based on PM measure reflected by the insignificant coefficient on SBQ.

Table 5.10 Results of relationship between corporate governance variable and MTB

Variables	Predicted sign	Coefficients	t-statistic
constant		6.448	0.52
BID	+	2.885	**2.28****
BS	-	0.376	0.58
BM	+	0.017	0.20
CEODUO	-	-0.351	**-2.63*****
TURN	-	-0.244	-0.90
SBID	+	-0.064	-0.09
SBS	-	0.085	0.14
SBM	+	0.070	0.81
SBQ	+	0.344	**3.46*****
F-value			5.22
R^2 within			0.007
N			3876

***p<0.01; **p<0.05; *p<0.10

BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification.

As Table 5.10 shows, the results of regression based on the MTB measure of performance are significantly different from the results based on the ROE and PM measures. BID and CEODUO are not associated with both ROE and PM; however, they are significantly related to MTB in the predicted direction. This finding indicates that hypothesis H1b and hypothesis H4b are supported based on the MTB performance measure. The coefficient on SBQ is positive and significant at 1%. Thus, hypothesis H9b is also supported by MTB measure.

In general, in the investigation of the effects of corporate governance on firm performance, board independence (hypothesis H1b) is not associated with firm performance as measured by ROE and PM, but is positively related to MTB which is a market-based measure of performance. This finding indicates that the effectiveness of independent directors of Chinese

listed companies on firm performance is sensitive to the measures of performance. The insignificant relationship between board independence and ROE is consistent with Tian and Lau (2001) who also found no relationship between the independent directors and firm performance as measured by ROE.

Supporting Hypothesis 2b, smaller board size leads to better firm performance based on both ROE and PM measures. This finding supports Yermack's (1996) argument that large boards make decision slower and have less discussion on managerial performance, and the costs from these problems may exceed the benefits of a large board. Therefore, larger boards are more costly and smaller boards are beneficial for Chinese companies.

Consistent with the hypothesis H3b, this thesis finds that the number of board meetings has a strong positive effect on firm performance as measured by ROE and PM. This finding supports previous evidence (Conger et al., 1998; Vafeas, 1999; Hu et al. 2010) that board meetings were important for directors and boards, with more meetings providing more opportunities to protect the interests of shareholders. CEO duality is not related to ROE and PM, indicating that the separation of the chairman and CEO roles has no effect on firm performance. This result is consistent with Wu et al., (1998) and Huang and Liang (2007) who found that CEO duality was not associated with firm performance for Chinese companies.

However, supporting hypothesis H4b, CEO duality is shown to be negatively associated with firm performance measured by MTB, indicating that the separation of CEO and chairman roles is beneficial for firm performance. This finding is consistent with finding of Bai et al. (2004) that CEO duality was negatively associated with market valuation of Chinese companies. Bai et al. (2004) also used market-based indicators (Tobin's Q and MTB) to measure firm performance. Therefore, hypothesis H4b that predicts a negative relationship between CEO duality and firm performance is supported based on the market-based performance indicator (MTB), but is not supported based on both accounting-based performance measures.

Under an effective board, low firm performance is expected to accompany top management turnover. The results support hypothesis H5b by showing a significantly negative relationship between top management turnover and firm performance based on two accounting-based measures. This finding is consistent with Firth et al. (2006) and Shen and Lin (2009) which indicated that performance was an important factor in management turnover in Chinese listed companies. Chinese companies have a different ownership structure to that of companies located in other countries, as the state is the major shareholder. Under the Code of Corporate Governance for Chinese listed companies, controlling shareholders play a significant role in the termination of top management. Therefore, there is a risk that the top management is dismissed due to political favour when the state is the major shareholder. Therefore, the Company Law set a rule that shareholders should not dismiss a chairman before the end of his/her contract date unless there is just cause to avoid the risk. The findings of this thesis indicate that the rule works effectively since poor firm performance is shown as a significant factor in dismissing top management.

Supervisory board independence (hypothesis H6b) is not related to any measure of firm performance. Therefore, independent supervisors who are supposed to improve the monitoring power of the supervisory board are found to be incapable of effectively performing their expected function for this sample. This finding is consistent with Hu et al. (2010) and Cho and Rui (2009) who demonstrated no relationship between independence of supervisory board and firm performance.

Consistent with hypothesis H7b, supervisory board size is negatively associated with PM, indicating that a smaller supervisory board improves firm performance. This finding is consistent with Wang (2013) which showed an inverse relationship between supervisory board size and firm valuation because smaller supervisory boards did not have problems in internal coordination, thus reducing costs and increasing firm value. Supervisory board size is not related to ROE and MTB. Although this finding is not consistent with the prediction, it is however, consistent with Shan and Xu (2012), and Su and He (2012) which indicated that the number of members of a supervisory board was not associated with firm performance. In general, this thesis finds that the effect of supervisory board size is sensitive to the measure of firm performance. This finding supports Berning and Frick (2010) who did not find a

consistent effect of supervisory board size on firm performance when different performance measures (return on equity and return on invested capital) were used.

The number of supervisory board meetings (hypothesis H8b) is not related to any measure of firm performance. This finding is not consistent with previous evidence that more active supervisory boards resulted in better firm performance (Cho & Rui, 2009). The finding however, is consistent with Bremert and Schulten (2009) who failed to find a relationship between frequency of supervisory board meetings and corporate performance based on a sample of German companies. According to Bremert and Schulten (2009), the number of supervisory board meetings is a rough proxy for board diligence with respect to the time spent by supervisors attending board meetings. Diligent supervisors can better consult the management and impact on management decisions. Furthermore, supervisors' diligence can also provide a signal to managers that their neglectful and self-serving work, if any, will most likely be detected by the supervisory board. However, the frequency of supervisory board meetings cannot fully capture the aspects related to the term diligence. This may be the reason for the insignificant effect of the number of supervisory board meetings on firm performance.

The positive effect of supervisory board qualification on ROE and MTB supports hypothesis H9b that predicted that more professional supervisors lead to better firm performance. This finding is consistent with Velte (2010) who showed that financial expertise on the supervisory board was positively related to firm performance. In the Chinese context, Shan and McIver (2011) found that the expertise of the supervisory board was not associated with firm performance for the period from 2001 to 2005. The insignificant relation in their study may be because the Code, which gave particular attention to the qualifications of supervisors, was issued in 2002 and thus Chinese companies did not pay significant attention to professional supervisors before or just after the code was issued. The results of this thesis thus indicate that Chinese companies have since conformed to the Code to include professional supervisors and these supervisors are shown to improve effectiveness of the supervisory board as the Code expected.

5.4.7 Conservatism and firm performance

The following two models are used to test the relationship between conservatism and firm performance:

CONACCR measure:

(4) $Performance_{it} = \beta_0 + \beta_1 CONACCR_{it} + \beta_2 Leverage_{it} + \beta_3 firm\ size_{it} + \beta_4 Sales\ growth_{it} + \beta_5 Industry_{it} + \varepsilon_{it}$

Asymmetric timeliness (AT) measure:

(5) $E_{it}/P_{it-1} = \beta_0 + \beta_1 R_{it} + \beta_2 D_{it} + \beta_3 R_{it}*D_{it} + \beta_4 Performance_{it} + \beta_5 R_{it}*Performance_{it} + \beta_6 D_{it}*Performance_{it} + \beta_7 R_{it}*D_{it}*Performance_{it} + \beta_8 Leverage_{it} + \beta_9 R_{it}*Leverage_{it} + \beta_{10} D_{it}*Leverage_{it} + \beta_{11} R_{it}*D_{it}*Leverage + \beta_{12} firm\ size_{it} + \beta_{13} R_{it}*firm\ size_{it} + \beta_{14} D_{it}*firm\ size_{it} + \beta_{15} R_{it}*D_{it}*firm\ size_{it} + \beta_{16} MTB_{it} + \beta_{17} R_{it}*MTB_{it} + \beta_{18} D_{it}*MTB_{it} + \beta_{19} R_{it}*D_{it}*MTB_{it} + \beta_{20} Industry_{it} + \beta_{21} R_{it}*Industry_{it} + \beta_{22} D_{it}* Industry_{it} + \beta_{23} R_{it}*D_{it}* Industry_{it} + \varepsilon_{it}$

Table 5.11 presents the relationship between CONACCR and firm performance using the ROE and PM measures. As described before, MTB is not used as an alternative measure of performance in the above two models because it has been included as a control variable in the asymmetric timeliness model. The results show that CONACCR is significant and negatively related to both ROE and PM measures, indicating that companies with higher levels of conservatism have lower firm performance. This finding is in contrast to the previous evidence (Watts & Zuo, 2011) and the prediction that conservatism improves firm performance by limiting operation of negative net present value (NPV) projects.

The relationship between asymmetric timeliness and firm performance is shown in Table 5.12. Panel A of Table 5.12 shows the results based on the ROE measure while Panel B presents the results based on the PM measure. The insignificant coefficient on ROE*RD indicates that AT is not associated with ROE. However, the coefficient on PM*RD is positive

as expected and significant at 1%. Therefore, Hypothesis 10 that predicts the benefit of conservatism on firm performance is not supported based on CONACCR conservatism but is supported based on asymmetric timeliness conservatism using PM to measure firm performance. The findings appear to be sensitive to whether the performance measure is accounting-based or market-based. The full list of the AT results are shown in Appendix C.

Table 5.11 Relationship between CONACCR and firm performance

	ROE measure		**PM measure**	
Variables	Coefficients	t-statistic	Coefficients	t-statistic
Constant	0.223	1.26	0.132	1.44
CONACCR	-0.277	**-4.18*** **	-0.250	**-3.47*** **
TA	-0.007	-0.91	-0.003	-0.80
LEV	-0.099	**-6.06*** **	-0.134	**-4.20*** **
Sales growth	0.082	**14.98*** **	0.047	**4.24*** **
F-value		**1891.07*** **		**272.23*** **
R^2 within		0.0754		0.0369
N		3876		3876

*** p<0.01; ** p<0.05; * p<0.10

CONACCR=Accrual based conservatism, TA= Total assets, LEV= Leverage.

Table 5.12 Relationship between AT and firm performance

Panel A: Relationship between AT and ROE measure

Variables	Coefficients	t-statistics
Constant	0.075	**4.51** **
ROE*R	0.002	0.40
ROE*RD	-0.030	-0.70
TA*R	0.005	**2.55** **
TA*RD	-0.003	-0.64
LEV*R	0.013	**2.35** **
LEV*RD	0.039	**2.36** **
MTB*R	-0.002	**-8.64*** **
MTB*RD	-0.003	**-4.01*** **
F-value		**2.59*** **
R^2 within		0.2729

N	3876

*******p<0.01; ******p<0.05; *****p<0.10

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, ROE= Return on equity, TA= Total assets, LEV= Leverage, MTB= Market to book ratio.

Panel B: Relationship between AT and PM measure

Variables	Coefficients	t-statistics
Constant	0.080	**4.63****
PM*R	-0.022	**4.30****
PM*RD	0.016	**5.10*****
TA*R	0.005	**2.54****
TA*RD	-0.002	-0.40
LEV*R	0.013	**1.99****
LEV*RD	0.034	**1.75***
MTB*R	-0.002	**-7.40*****
MTB*RD	-0.003	**-3.38*****
F-value		**2.17*****
R^2 within		0.2597
N		3876

*******p<0.01; ******p<0.05; *****p<0.10

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, PM= Profit margin, TA= Total assets, LEV= Leverage, MTB= Market to book ratio.

Conservatism is predicted to be beneficial for firm performance because it can constrain managers' ability to manage upward current reported earnings and constrain managers' incentives to continue undertaking negative net present value (NPV) projects. Previous evidence (Watts, 2003; LaFond and Watts 2008; Watts & Zuo, 2011) also showed that conservatism constrained managers' opportunistic behaviour and improved firm value. Findings of this thesis support the benefit of conservatism on firm performance when asymmetric timeliness is used to measure conservatism. In Duellman's (2006) study, previous profitability measured by the average ROA and PM from the current and prior two-years was also controlled in the CONACCR model. The lack of previous profitability as a

control variable in this study may contribute to the conflicting results based on the CONACCR measure.

5.4.8 Moderating effect of ownership structure (H11)

The moderating effect of ownership structure (i.e. ownership concentration and state ownership) on the effectiveness of corporate governance on conservatism and firm performance is examined in this section.

5.4.8.1 Moderating effect on the relation between GOV and conservatism

The following empirical models are employed to examine the moderating effect of concentrated ownership and state ownership on the relationship between corporate governance and conservatism.

Accrual-based Conservatism (CONACCR):

(6) $CONACCR_{it} = \beta_0 + \beta_1 GOV_{it} + \beta_2 SHARE_{it} + \beta_3 ST_{it} + \beta_4 SHARE_{it}*GOV_{it} + \beta_5 ST_{it}*GOV_{it} + \beta_4 TURN_{it} + \beta_5 Firm\ size_{it} + \beta_6 Sales\ growth_{it} + \beta_7 Profitability_{it} + \beta_8 Leverage_{it} + \beta_9 Industry_{it} + \varepsilon_{it}$

Asymmetric timeliness (AT)

(7) $E_{it}/P_{it-1} = \beta_0 + \beta_1 R_{it} + \beta_2 D_{it} + \beta_3 R_{it}*D_{it} + \beta_4 GOV_{it} + \beta_5 R_{it}*GOV_{it} + \beta_6 D_{it}*GOV_{it} + \beta_7 R_{it}*D_{it}*GOV_{it} + \beta_8 SHARE + \beta_9 R_{it}*SHARE + \beta_{10} D_{it}* SHARE + \beta_{11} R_{it}*D_{it}SHARE + \beta_{12} ST + \beta_{13} R_{it}* ST + \beta_{14} D_{it}* ST + \beta_{15} R_{it}*D_{it}ST + \beta_{16} GOV_{it}*SHARE + \beta_{17} R_{it}*GOV_{it}*SHARE + \beta_{18} D_{it}*GOV_{it}*SHARE + \beta_{19} R_{it}*D_{it}*GOV_{it}*SHARE + \beta_{20} GOV_{it}*ST + \beta_{13} R_{it}*GOV_{it}*ST + \beta_{21} D_{it}*GOV_{it}*ST + \beta_{22} R_{it}*D_{it}*GOV_{it}*ST + TURN\ and\ Control\ variables + \varepsilon_{it}$

Table 5.13 shows the results for the CONACCR model. Column (a) presents the results on the main effect of GOV on CONACCR and column (b) presents the results on the moderating effect of ownership structure. In column (a), contrary to the expectation, the main effect of

GOV on CONACCR is negative and significant at 1%, indicating that stronger firms' governance leads to less conservatism. Column (b) shows the moderating effect of concentrated ownership and state ownership. The results indicate that when GOV is not influenced by the ownership structure, GOV is significantly negatively related to CONACCR. However, when GOV is interacted with SHARE (ownership concentration) and ST (state ownership), the coefficient turns insignificant, suggesting that ownership concentration and state ownership do not moderates the relationship between GOV and conservatism.

Table 5.14 shows the results for the asymmetric timeliness model. In column (a), although the significant and negative coefficient on GOV*R reflects that stronger firms' governance leads to slower recognition of good news, the coefficient on GOV*RD is not significant, indicating that firms' governance is not related to asymmetric timeliness conservatism. Interaction effect between GOV and both SHARE and ST are made to examine whether the effect of GOV on AT is influenced by the ownership concentration and state ownership. Results in column (b) show that both the coefficients on SHARE*GOV*RD is insignificant, implying ownership concentration does not have any significant moderating effect on the effectiveness of GOV on conservatism. The coefficient on SHARE*GOV*R is significant, however, inconsistent with the expectation, the negative sign indicating that ownership concentration influencing firms' governance to delay the recognition of good news. The coefficient on ST*GOV*RD is significantly negative, suggesting that state ownership negatively moderate the relationship between firms' governance and conservatism as expected.

Table 5.13 Results of CONACCR: main effect and moderating effect

		(a) Main effect		**(b) Moderating effect**	
Variables	Predicted sign	Coefficients	t-statistic	Coefficients	t-statistics
Constant		0.109	**1.74***	0.115	**1.84***
SHARE	-	-0.024	**-2.86*****	-0.047	**-3.93*****
ST	-	0.006	1.59	0.008	0.51
GOV	+	-0.009	**-4.87*****	-0.023	**-3.15****
SHARE*GOV	-			0.046	1.25
ST*GOV	-			-0.004	-0.11
CEOTOA	-	0.002	**2.04****	0.002	**2.02****
TA	-	-0.005	**-1.85***	-0.005	**-1.82***
ROA	+	-0.062	**-2.60*****	-0.062	**-2.62*****
LEV	+	-0.025	**-4.06*****	-0.025	**-4.08*****
SGROW	-	0.001	**2.53****	0.001	**2.44****
F-value		**6.33*****			**100.04*****
R^2 within		0.0143			0.0145
N		3876			3876

***p<0.01; **p<0.05; *p<0.10

SHARE= Ownership concentration, ST= State ownership, GOV=Firms' aggregate governance measure, TURN= Top management turnover, TA= Total assets, SGROW= Sales growth, ROA= Return on assets, LEV= Leverage.

Table 5.14 Results of asymmetric timeliness: main effect and moderating effect

		(a) Main effect		**(b) Moderating effect**	
Variables	Predicted signs	Coefficients	t-statistics	Coefficients	t-statistics
SHARE*R	+	-0.003	**-2.95*** **	0.095	**4.71*** **
SHARE*RD	-	-0.016	-0.83	-0.093	-1.63
ST*R	+	0.001	0.54	0.004	0.49
ST*RD	-	-0.016	-0.83	0.196	**4.17*** **
GOV*R	-	-0.016	**-1.86***	0.053	**3.84*** **
GOV*RD	+	0.027	0.54	0.077	**2.96** **
SHARE*GOV*R	+			-0.189	**-4.90*** **
SHARE*GOV*RD	-			0.126	1.04
ST*GOV*R	+			-0.007	-0.41
ST*GOV*RD	-			-0.360	**-5.28*** **
CEOTOA*R	+	-0.002	-0.83	-0.003	-1.03
CEOTOA*RD	-	-0.022	**-3.47*** **	-0.019	**-3.56*** **
TA*R	+	0.004	**2.28** **	0.004	**2.19** **
TA*RD	-	-0.002	-0.32	0.000	0.02
ROA*R	-	0.006	0.52	0.006	0.47
ROA*RD	+	-0.120	**-2.53** **	-0.133	**-2.82*** **
LEV*R	-	0.015	**2.50** **	0.016	**2.82*** **
LEV*RD	+	0.021	1.21	0.022	1.50
MTB*R	+	-0.002	**-7.41*** **	-0.002	**-6.82*** **

*** p<0.01; ** p<0.05; * p<0.10

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, SHARE= Largest shareholdings, ST= State ownership, GOV=Firms' aggregate governance measure, TURN= Dummy equals 1 if top management is changed, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

Overall, the hypothesis that companies with stronger governance adopt more conservatism is not supported in both CONACCR and AT models. The result may be due to the problem of an aggregate measure of corporate governance. As Bhagat et al. (2008) documented, the construction of governance indices is based on two assumptions: first, good governance components do not vary across companies; second, the components are always complements and never substitutes. However, the finding of some studies (Alli, Chan, Subrahmanyam &

Thapa, 2010; Bozec & Bozec, 2012) support the fact that several governance mechanisms are actually substitutes and not complements. Specifically, the Pearson and Spearman correlations in Chapter Five of this thesis show that the coefficients between some governance features are significantly negative[5]. For instance, the coefficient between board independence and board size is negative. Therefore, some corporate governance mechanisms in Chinese companies may be substitutes, resulting in inaccurate measure of the quality of firms' governance. Moreover, the effective governance components may depend on firms' specific circumstance (Bhagat et al., 2008). Thus, the first assumption that good governance components do not vary across companies may not be correct either.

In terms of the moderating effect of ownership structure, ownership concentration and state ownership do not have significant moderating effect on the effectiveness of firms' governance on conservatism based on the AT measure. In the CONACCR model, the moderating effect of state ownership is also insignificant but ownership concentration is shown to negatively influence the effectiveness of firms' governance on conservatism and significant at the 10% level. Thus the result marginally supports hypothesis H11b that proposed negative moderating effect of ownership concentration on the relationship between corporate governance and conservatism. This finding suggests that the moderating effect of ownership concentration on the relationship between GOV and conservatism is sensitive to the measures of conservatism. The negative moderating effect of ownership concentration based on the CONACCR measure is consistent with the argument that the controlling shareholders would influence governance to adopt less conservatism. This may be attributed to the entrenchment effect, where the largest shareholders influence the company to adopt aggressive accounting policies for their benefit, even if the interests of other shareholders are harmed (Wu, 2011). Controlling shareholders may expropriate interests from minority shareholders; therefore they have incentives to employ less conservatism to disguise their expropriation behaviour. Although the Chinese authorities have issued corporate governance reforms to implement gradual privatisation in state-owned enterprises (SOEs), a majority of Chinese companies in this sample are still controlled by the state. The multivariate analyses

[5] Significant negative correlations between two governance features might suggest that the provisions are substitutes (Bozec & Bozec, 2012).

show that state ownership does not have any moderating effect on the effectiveness of firms' governance on conservatism based on both measures. This finding does not support the idea that state ownership may negatively moderate the effectiveness of firms' governance. However, the results are consistent with the notion in Cullinan et al. (2012) that managers of state-related companies do not adopt different levels of conservatism compared to managers of non-stated-related companies. This outcome also supports the objectives of the 2005 securities reforms, which were issued to decrease the differences between state-controlled companies and privately controlled companies.

5.4.8.2 Moderating effect on the relation between GOV and performance

The following empirical model is employed to examine the moderating effect of concentrated ownership and state ownership on the relationship between corporate governance and firm performance. Performance is measured by ROE, profit margin and MTB.

(8) $\text{Performance}_{it} = \beta_0 + \beta_1 GOV_{it} + \beta_2 SHARE_{it} + \beta_3 ST_{it} + \beta_3 SHARE_{it} * GOV_{it} + \beta_4 ST_{it} * GOV_{it} + \beta_4 TURN_{it} + \beta_5 \text{Firm size}_{it} + \beta_6 \text{Leverage}_{it} + \beta_7 \text{Industry}_{it} + \varepsilon_{it}$

Table 5.15 shows the results based on the ROE measure of firm performance. Column (a) presents the results of the main effect of GOV on ROE and column (b) presents the results of the moderating effect. The results in column (a) show that GOV has a significantly positive association with ROE, indicating that stronger firms' governance leads to better firm performance. The results in column (b) indicate that when GOV is not influenced by the ownership structure, GOV is not significantly associated with ROE. When GOV is interacted with SHARE and ST, the coefficient are not significant, indicating that the moderating effect of concentrated ownership and state ownership on the effectiveness of GOV on firm performance is not significant.

Table 5.15 Results of ROE measure: main effect and moderating effect

		(a) Main effect		(b) Moderating effect	
Variables	Predicted sign	Coefficients	t-statistic	Coefficients	t-statistics
Constant		-0.115	-0.34	-0.087	-0.25
SHARE	-	0.208	**6.18*** **	0.166	**1.67***
ST	-	0.001	0.15	-0.048	-0.85
GOV	+	0.063	**2.28** **	0.009	0.12
SHARE*GOV	-			0.083	0.42
ST*GOV	-			0.101	1.04
CEOTOA	-	-0.035	**-6.20*** **	-0.035	**-6.24*** **
F-value		**53.99*** **			**34.33*** **

*** p<0.01; ** p<0.05; * p<0.10

SHARE= Ownership concentration, ST= State ownership, GOV=Firms' aggregate governance measure, TURN= Top management turnover.

Table 5.16 shows the results based on PM measure of firm performance. In column (a), the main effect of GOV on PM is not significant. In column (b), the results show that without the influence of ownership structure, GOV is not related to firm performance. When GOV is interacted with SHARE (SHARE*GOV) and ST (ST*RD), the coefficient on SHARE*GOV is significantly positive and the coefficient on ST*RD is not significant. Therefore, consistent with the results based on ROE measure, ownership concentration positively moderates the relationship between GOV and PM and state ownership does not have a significant moderating effect.

Table 5.16 Results of PM measure: main effect and moderating effect

		(a) Main effect		(b) Moderating effect	
Variables	Predicted sign	Coefficients	t-statistic	Coefficients	t-statistics
Constant		-0.074	-0.48	-0.033	-0.24
SHARE	-	0.091	**2.70*** **	-0.071	**-2.17** **
ST	-	-0.038	-1.25	0.007	0.16
GOV	+	0.042	1.23	-0.040	-0.77
SHARE*GOV	-			0.313	**6.72*** **
ST*GOV	-			-0.089	-1.28
CEOTOA	-	-0.041	**-8.10*** **	-0.041	**-8.12*** **

*** p<0.01; ** p<0.05; * p<0.10

SHARE= Ownership concentration, ST= State ownership, GOV=Firms' aggregate governance measure, TURN= Top management turnover.

Table 5.17 provides the results based on MTB measure of firm performance. Consistent with ROE measure, the main effect of GOV on MTB is positive and significant at 5%. In column (b), the results show that without the influence of ownership structure, GOV is positive related to firm performance. When GOV is interacted with SHARE (SHARE*GOV) and ST (ST*RD), the coefficient on SHARE*GOV is not significant and the coefficient on ST*RD becomes significantly negative. Therefore, based on MTB measure, ownership concentration does not moderates the relationship between GOV and PM while state ownership negatively moderates the effectiveness of GOV on firm performance as expected.

Table 5.17 Results of MTB measure: main effect and moderating effect

		(a) Main effect		(b) Moderating effect	
Variables	Predicted sign	Coefficients	t-statistic	Coefficients	t-statistics
Constant		7.765	0.51	7.043	0.46
GOV	+	1.868	**2.34****	3.766	**10.42*****
SHARE*GOV	-			-2.022	-0.71
ST*GOV	-			-4.588	**-11.29*****
TURN	-	-0.244	-0.94	-0.252	-1.00
F-value		**13.33*****			**287.01*****
R^2 within		0.0058			0.0104
N		3876			3876

*****p<0.01; ****p<0.05; ***p<0.10

SHARE= Ownership concentration, ST= State ownership, GOV=Firms' aggregate governance measure, TURN= Top management turnover.

In general, the hypothesis H11b that companies with stronger governance have better firm performance is supported based on the ROE and MTB measure but not supported based on the PM measure. The non-relationship between GOV and PM is not consistent with the hypothesis and results of previous studies (García Lara et al., 2007; Duellman, 2006) that companies with stronger corporate governance have better performance. However, this finding supports the argument proposed by Bhagat et al. (2008) that no one governance index is correlated with all of the performance measures that are thought to be important for investors. Inconsistent with the prediction, ownership concentration is shown to have positive moderating effect on the relationship between GOV and firm performance based on ROE and PM and has no moderating effect based on the MTB measure. The positive effect may be because ownership concentration creates an incentive for controlling shareholders to monitor management's commitment to better corporate performance. However, since ownership concentration is shown to influence governance to adopt less conservatism in the CONACCR model, the positive moderating effect on the relation between GOV and firm performance could be attributed to a lesser employment of conservative accounting. If companies with concentrated ownership adopt less conservatism, the amount of profit reported in the financial statements will be improved, and thus the perception of better accounting performance produced.

State ownership (hypothesis H11c) has a negative moderating effect on the relationship between firms' governance and firm performance only in the MTB model. This finding is consistent with the negative effect of state ownership found by Xu and Wang (1999), Gunasekarage et al. (2007) and Wei et al. (2005) who also used MTB to measure firm performance.

In summary, the hypothesis that ownership concentration negatively moderates the relationship between firms' governance and firm performance is not supported based on all performance measures. The hypothesis that state ownership negatively moderates the effectiveness of firms' governance on firm performance is not supported in ROE and PM model while it is supported in MTB model.

5.5 Additional analyses

The primary regression in section 5.4 presents a general test for individual hypotheses. Some additional tests are performed to examine the credibility of the initial results. First, following Yunos' (2011) study which used dummy variables as alternative measures, an additional analysis re-examined the effects of board size (BS), board meetings (BM), supervisory board independence (SBID), supervisory board meetings (SBM), and leverage (LEV) on conservatism or firm performance since they do have predicted effects on both measures of conservatism and firm performance. Ownership concentration and state ownership are also measured by dummy variables to examine their moderating effect. Second, companies are separated into large and small companies to test whether the effect of CEO duality on conservatism and firm performance is sensitive to firm size. In addition, this thesis also tests whether the U-shaped effect exists for some corporate governance variables.

5.5.1 Board size using binary variables (H2a)

The initial analysis reports that board size (BS) is not significantly associated with CONACCR and positively related to AT measure. This finding is not consistent with the hypothesis that smaller boards lead to more conservatism. According to Jensen (1993), when

a board of directors included more than eight members, it was less likely to function effectively. An insight into the data of this thesis indicates that 16.00% of the observations have less than eight directors and 76.47% had more than eight directors. The remaining 7.53% had exactly eight board members. Since the effect of BS on conservatism is not consistent with expectations when BS is measured by a continuous variable, an additional analysis using a dummy variable to measure BS is performed.

Companies with large boards (BS>8) are coded as 1 and companies with small boards (BS≤8) are coded as 0. As presented in Table 5.18 and 5.19, the coefficients on DUMMY-BS and DUMMY-BS*RD are still not significant. This finding thus confirms the initial result that BS is not an important factor influencing conservative accounting. The full list of the AT results are reported in Appendix D.

Table 5.18 Results of CONACCR conservatism: board size using binary variables

Variables	Predicted sign	Coefficients	t-statistics
Constant		0.095	**1.73***
BID	+	0.002	0.19
DUMMY-BS	-	*-0.001*	*-0.68*
BM	+	-0.000	-1.44
CEODUO	-	0.006	**3.49*****
TURN	+	0.002	**2.47****
SBID	+	-0.004	-0.74
SBS	-	0.003	**2.18***
SBM	+	0.000	0.08
SBQ	+	0.005	**3.93*****
TA	-	-0.005	**-1.93***
SGROW	-	0.001	**2.62*****
ROA	+	-0.063	**-2.49****
LEV	+	-0.027	**-4.14*****
F-value			**20.36*****
R^2 within			0.0159
N			3876

*****p<0.01; ****p<0.05**; ***p<0.10

BID= Board independence, BDGOV= Presence of governmental officials, BS= Board size, BM= Board meetings, CEODUO= CEO duality, TURN= Top management turnover, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, TA= Total assets, SGROW= Sales growth, ROA= Return on assets, LEV= Leverage

Table 5.19 Results of AT conservatism: board size using binary variables

Variables	Predicted signs	Coefficients	t-statistic
BID*R	-	-0.007	-0.34
BID*RD	+	0.000	0.00
*DUMMY-BS*R*	+	*0.002*	*1.22*
*DUMMY-BS*RD*	-	*0.003*	*1.21*
BM*R	-	-0.000	-1.22
BM*RD	+	-0.001	-1.27
CEODUO*R	+	-0.004	**-5.48*** **
CEODUO*RD	-	-0.002	-0.33
TURN*R	-	-0.003	-1.10
TURN*RD	+	-0.023	**-3.89*** **
SBID*R	-	0.010	**4.16*** **
SBID*RD	+	0.023	**1.71***
SBS*R	+	0.000	0.51
SBS*RD	-	-0.023	**-6.07*** **
SBM*R	-	-0.001	**-3.77*** **
SBM*RD	+	-0.001	-0.26
SBQ*R	-	-0.007	**-4.21*** **
SBQ*RD	+	0.023	**1.88***
TA*R	+	0.005	**2.39****
TA*RD	-	-0.001	-0.29
ROA*R	-	0.005	0.47
ROA*RD	+	-0.131	**-1.76***
MTB*R	+	-0.002	**-7.95*** **
MTB*RD	-	-0.002	**-5.01****
LEV*R	-	0.016	**2.64*** **
LEV*RD	+	0.026	1.10
F-value			**2.54*** **
R^2 within			0.2891
N			3876

*** $p<0.01$; ** $p<0.05$; * $p<0.10$

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, BID= Board independence, BDGOV= Dummy equals 1 if government officers are independent directors, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

5.5.2 Board meetings using binary variables (H3a)

The initial analysis shows that the frequency of board meetings (BM) has no significant effect on accounting conservatism. To confirm the credibility of the initial result, a regression analysis is performed using a dummy variable to measure frequency of board meetings. The median number of board meetings (9 meetings) is used as the cut-off point to code sample companies. Dummy 1 is assigned for active board (BM>9) and 0 is assigned for inactive board (BM≤9). The results in Table 5.20 and 5.21 show that BM is still not significantly associated with either CONACCR or AT, indicating that a threshold of 9 meetings is not reflective of an effective number of meetings. The full list of the results for AT is shown in the Appendix E. H3a is thus not supported after using a dummy variable to measure BM.

Table 5.20 Results of CONACCR conservatism: board meetings using binary variables

Variables	Predicted sign	Coefficients	t-statistics
Constant		0.094	**1.75***
BID	+	0.005	0.39
BS	-	-0.002	-0.97
DUMMY-BM	+	*-0.000*	*-0.07*
CEODUO	-	0.006	**3.43*****
TURN	+	0.002	**2.36****
SBID	+	-0.003	-0.67
SBS	-	0.003	**2.07****
SBM	+	-0.000	-0.30
SBQ	+	0.006	**4.33*****
TA	-	-0.005	**-1.89***
SGROW	-	0.001	**2.63*****
ROA	+	-0.064	**-2.60****
LEV	+	-0.027	**-4.16*****
F-value			**15.26*****
R^2 within			0.0155
N			3876

*****p<0.01; ****p<0.05**; ***p<0.10

BID= Board independence, BDGOV= Presence of governmental officials, BS= Board size, BM= Board meetings, CEODUO= CEO duality, TURN= Top management turnover, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, TA= Total assets, SGROW= Sales growth, ROA= Return on assets, LEV= Leverage

Table 5.21 Results of AT conservatism: board meetings using binary variables

Variables	Predicted signs	Coefficients	t-statistic
BID*R	-	-0.011	-0.83
BID*RD	+	0.125	**2.95*** **
BS*R	+	0.009	**2.21** **
BS*RD	-	0.043	**3.11*** **
*DUMMY-BM*R*	-	*-0.001*	*-0.93*
*DUMMY-BM*RD*	+	*-0.000*	*-0.14*
CEODUO*R	+	-0.004	**-5.71*** **
CEODUO*RD	-	-0.006	-0.83
TURN*R	-	-0.003	-1.14
TURN*RD	+	-0.025	**-4.13*** **
SBID*R	-	0.010	**4.84*** **
SBID*RD	+	0.014	1.34
SBS*R	+	-0.001	-0.91
SBS*RD	-	-0.033	**-15.25*** **
SBM*R	-	-0.001	**-3.84*** **
SBM*RD	+	-0.002	-0.41
SBQ*R	-	-0.006	**-4.29*** **
SBQ*RD	+	0.025	**1.95***
TA*R	+	0.004	**2.32** **
TA*RD	-	-0.002	-0.60
ROA*R	-	0.007	0.62
ROA*RD	+	-0.129	**-1.98** **
MTB*R	+	-0.002	**-8.06*** **
MTB*RD	-	-0.003	**-3.91** **
LEV*R	-	0.016	**2.90*** **
LEV*RD	+	0.034	1.26
F-value			**16.09*** **
R^2 within			0.2906
N			3876

*** $p<0.01$; ** $p<0.05$; * $p<0.10$

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

5.5.3 Supervisory board independence using binary variables (H6)

The earlier finding indicates that supervisory board independence (SBID) has no significant influence on conservatism and firm performance, which contradicts the expectation that a greater proportion of independent members on supervisory boards leads to higher levels of conservatism and better firm performance. As shown in the descriptive statistics, the median zero value indicates that more than half of sample companies did not appoint any independent members to the supervisory board. Thus, an alternative measure of SBID was developed using a dummy variable to distinguish companies with independent supervisors and companies without independent supervisors. A dummy is assigned as 1 for a company if it has independent supervisors and 0 otherwise. As reported in Table 5.22 and Table 5.23, the coefficients on SBID and SBID*RD are still insignificant. Therefore, the results confirm the initial analysis that SBID is not a significant factor influencing conservatism practices. The full list of the results for AT is shown in the Appendix F.

Table 5.22 Results of CONACCR conservatism: SBID using binary variables

Variables	Predicted sign	Coefficients	t-statistics
Constant		0.096	**1.83***
BID	+	0.005	0.36
BS	-	-0.002	-1.00
BM	+	-0.000	-1.38
CEODUO	-	0.006	**3.54*****
TURN	+	0.002	**2.45****
DUMMY-SBID	+	*-0.001*	*-0.24*
SBS	-	0.004	**2.14****
SBM	+	0.000	0.08
SBQ	+	0.005	**4.32*****
TA	-	-0.005	**-1.92***
SGROW	-	0.001	**2.41****
ROA	+	-0.063	**-2.49****
LEV	+	-0.027	**-4.21*****
F-value			**17.03*****
R^2 within			0.0158
N			3876

*****p<0.01; ****p<0.05**; ***p<0.10

BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= CEO duality, TURN= Top management turnover, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, TA= Total assets, SGROW= Sales growth, ROA= Return on assets, LEV= Leverage

Table 5.23 Results of AT conservatism: SBID using binary variables

Variables	Predicted signs	Coefficients	t-statistic
BID*R	-	-0.012	-0.91
BID*RD	+	0.121	**3.12*** **
BS*R	+	0.008	**2.09** **
BS*RD	-	0.046	**2.84*** **
BM*R	-	-0.000	-1.19
BM*RD	+	-0.000	-0.49
CEODUO*R	+	-0.004	**-6.30*** **
CEODUO*RD	-	-0.006	-0.99
TURN*R	-	-0.003	-1.07
TURN*RD	+	-0.024	**-4.29*** **
*DUMMY-SBID*R*	-	*0.002*	***2.04*** **
*DUMMY-SBID*RD*	+	*0.002*	*0.27*
SBS*R	+	-0.001	-1.38
SBS*RD	-	-0.035	**-8.61*** **
SBM*R	-	-0.001	**-4.09*** **
SBM*RD	+	-0.001	-0.14
SBQ*R	-	-0.006	**-4.24*** **
SBQ*RD	+	0.028	**2.03** **
TA*R	+	0.004	**2.32** **
TA*RD	-	-0.002	-0.64
ROA*R	-	0.006	0.57
ROA*RD	+	-0.125	**-1.96***
MTB*R	+	-0.002	**-7.74*** **
MTB*RD	-	-0.002	**-4.64*** **
LEV*R	-	0.016	**2.69*** **
LEV*RD	+	0.029	1.06
F-value			**12.22*** **
R^2 within			0.2897
N			3876

*** p<0.01; ** p<0.05; * p<0.10

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

Table 5.24, Table 5.25 and Table 5.26 show the effect of SBID on firm performance using the alternative measure of SBID. The results in the three tables show that the coefficients of SBID are still not significant based on all measures of firm performance. This finding is consistent with the initial analysis that independent supervisors are not effective in improving firm performance. Therefore, hypothesis H6b is still not supported in the additional analysis.

Table 5.24 Results of ROE measure: SBID using binary variables

Variables	Predicted sign	Coefficients	t-statistic
constant		0.066	0.23
BID	+	-0.074	-1.21
BS	-	-0.033	**-3.41*****
BM	+	0.002	**2.56****
CEODUO	-	-0.011	-1.46
TURN	-	-0.037	**-6.22*****
DUMMY-SBID	+	*0.002*	*1.28*
SBS	-	-0.007	-0.40
SBM	+	0.000	0.12
SBQ	+	0.014	**3.56*****
F-value			**2.15*****
R^2 within			0.0217
N			3876

*****p<0.01; ****p<0.05; ***p<0.10

BID= Board independence, BDGOV= Dummy equals 1 if government officers are independent directors, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification.

Table 5.25 Results of PM measure: SBID using binary variables

Variables	Predicted sign	Coefficients	t-statistic
constant		0.031	0.23
BID	+	-0.010	-0.78
BS	-	-0.025	**-1.91***
BM	+	0.003	**3.36*****
CEODUO	-	-0.001	-0.19
TURN	-	-0.042	**-7.74*****
DUMMY-SBID	+	*-0.005*	*-1.42*
SBS	-	-0.011	**-2.31****
SBM	+	-0.001	-0.59
SBQ	+	0.001	0.10
F-value			**31.30*****
R^2 within			0.0320
N			3876

*****p<0.01; ****p<0.05; *p<0.10

BID= Board independence, BDGOV= Dummy equals 1 if government officers are independent directors, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification.

Table 5.26 Results of MTB measure: SBID using binary variables

Variables	Predicted sign	Coefficients	t-statistic
constant		6.400	0.51
BID	+	2.887	**2.33****
BS	-	0.370	0.57
BM	+	0.017	0.20
CEODUO	-	-0.352	**-2.81*****
TURN	-	-0.245	-0.90
DUMMY-SBID	+	*0.076*	*0.34*
SBS	-	0.054	0.09
SBM	+	0.070	0.80
SBQ	+	0.350	**3.79*****
F-value			**6.21*****
R^2 within			0.0072
N			3876

***p<0.01; **p<0.05; *p<0.10

BID= Board independence, BDGOV= Dummy equals 1 if government officers are independent directors, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification.

5.5.4 Supervisory board meetings using binary variables (H8)

As with board meetings, the initial results suggest that the number of supervisory board meetings (SBM) is not significantly associated with conservatism and firm performance. To confirm the credibility of this result, a regression analysis is repeated using a dummy variable to measure SBM. Table 5.1 shows that the median of SBM is 4 meetings and thus a supervisory board holding more than 4 meetings every year is considered as a relatively active board. Companies with active supervisory boards (SBM>4) are coded as 1 and 0 otherwise. The results in Table 5.27 show that the coefficient on SBM is still insignificant based on CONACCR measure. As Table 5.28 indicates, consistent with the prediction, the coefficient on SBM*R is negative and significant, indicating that more frequent supervisory board meetings delay the recognition of good news. However, the coefficient on SBM*RD which reflects the incremental effect of recognizing bad news relative to good news into

earnings is not significant. Therefore, the earlier finding that SBM have insignificant effects on conservatism is confirmed. The full list of asymmetric timeliness is presented in Appendix G.

Table 5.27 Results of CONACCR: SBM using binary variables

Variables	Predicted sign	Coefficients	t-statistics
Constant		0.098	**1.87***
BID	+	0.004	0.33
BS	-	-0.002	-1.02
BM	+	-0.000	**-1.73***
CEODUO	-	0.006	**3.37*****
TURN	+	0.002	**2.40****
SBID	+	-0.004	-0.68
SBS	-	0.004	**2.45****
DUMMY-SBM	+	*0.001*	*0.75*
SBQ	+	0.005	**4.30*****
TA	-	-0.005	**-1.97***
SGROW	-	0.001	**2.54****
ROA	+	-0.063	**-2.49****
LEV	+	-0.027	**-4.14*****
F-value			**17.61*****
R^2 within			0.0160
N			3876

*****p<0.01; ****p<0.05**; ***p<0.10

BID= Board independence, BDGOV= Presence of governmental officials, BS= Board size, BM= Board meetings, CEODUO= CEO duality, TURN= Top management turnover, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, TA= Total assets, SGROW= Sales growth, ROA= Return on assets, LEV= Leverage

Table 5.28 Results of asymmetric timeliness: SBM using binary variables

Variables	Predicted signs	Coefficients	t-statistic
BID*R	-	-0.012	-0.94
BID*RD	+	0.107	**2.44****
BS*R	+	0.008	**2.03****
BS*RD	-	0.049	**2.91*****
BM*R	-	-0.000	-1.33
BM*RD	+	-0.000	-0.52
CEODUO*R	+	-0.004	**-6.52*****
CEODUO*RD	-	-0.004	-0.70
TURN*R	-	-0.003	-1.10
TURN*RD	+	-0.022	**-3.28*****
SBID*R	-	0.010	**4.86*****
SBID*RD	+	0.017	1.44
SBS*R	+	-0.000	-0.40
SBS*RD	-	-0.034	**-14.18*****
*DUMMY-SBM*R*	-	*-0.002*	***-5.40*****
*DUMMY-SBM*RD*	+	*-0.011*	*-1.32*
SBQ*R	-	-0.006	**-4.72*****
SBQ*RD	+	0.025	**2.01****
TA*R	+	0.004	**2.40****
TA*RD	-	-0.001	-0.32
ROA*R	-	0.010	0.63
ROA*RD	+	-0.128	**-1.97****
MTB*R	+	-0.002	**-8.00*****
MTB*RD	-	-0.002	**-3.27*****
LEV*R	-	0.016	**2.66*****
LEV*RD	+	0.031	1.35
F-value			**8.51*****
R^2 within			0.2913
N			3876

*** $p<0.01$; ** $p<0.05$; * $p<0.10$

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

Table 5.29, Table 5.30 and Table 5.31 show the relationship between SBM and firm performance based on the three measures of performance. Consistent with the initial analysis, SBM is still not significantly related to firm performance. The finding that the frequency of SBM has no significant influence on firm performance is thus confirmed.

Table 5.29 Results of ROE measure: SBM using binary variables

Variables	Predicted sign	Coefficients	t-statistic
constant		0.069	0.24
BID	+	-0.076	-1.25
BS	-	-0.034	**-3.42*** **
BM	+	0.002	**3.13*** **
CEODUO	-	-0.010	-1.42
TURN	-	-0.037	**-6.15*** **
SBID	+	0.008	0.92
SBS	-	-0.006	-0.35
DUMMY-SBM	+	*0.002*	*0.75*
SBQ	+	0.014	**3.60*** **
F-value			**2.11*** **
R^2 within			0.0218
N			3876

*** p<0.01; ** p<0.05; * p<0.10

BID= Board independence, BDGOV= Dummy equals 1 if government officers are independent directors, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification.

Table 5.30 Results of PM measure: SBM using binary variables

Variables	Predicted sign	Coefficients	t-statistic
constant		0.286	0.20
BID	+	-0.009	-0.60
BS	-	-0.026	**-1.98****
BM	+	0.002	**4.00*****
CEODUO	-	-0.001	-0.19
TURN	-	-0.043	**-7.62*****
SBID	+	-0.005	-0.29
SBS	-	-0.012	**-2.92****
DUMMY-SBM	+	*-0.001*	*-0.41*
SBQ	+	0.001	0.09
F-value			**35.98*****
R^2 within			0.0316
N			3876

*****p<0.01; ****p<0.05; ***p<0.10

BID= Board independence, BDGOV= Dummy equals 1 if government officers are independent directors, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification.

Table 5.31 Results of MTB measure: SBM using binary variables

Variables	Predicted sign	Coefficients	t-statistic
constant		6.674	0.54
BID	+	2.824	**2.29*** **
BS	-	0.384	0.60
BM	+	0.022	0.28
CEODUO	**-**	**-0.355**	**-2.54****
TURN	-	-0.240	-0.88
SBID	+	-0.072	-0.10
SBS	-	0.060	0.10
DUMMY-SBM	+	*0.106*	*0.69*
SBQ	**+**	0.350	**3.72*** **
F-value			**4.96*** **
R^2 within			0.0064
N			3876

*** p<0.01; ** p<0.05; * p<0.10

BID= Board independence, BDGOV= Dummy equals 1 if government officers are independent directors, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification.

5.5.5 Leverage using binary variables

Leverage (LEV) is found to be significantly negative related to CONACCR, indicating that higher leverage leads to lower CONACCR. This relationship is contrary to the expectation that highly leveraged companies adopt more conservatism in order to reduce the conflicts between bond-holder and share-holder. Thus, an alternative measure of leverage using a dummy variable to distinguish leveraged companies and non-leveraged companies is employed, labelled as DUMMY-LEV. Leveraged companies are coded as 1 and unleveraged companies are coded as 0. As shown in Table 5.32 and Table 5.33, consistent with the initial analysis, leverage is significantly negative related to CONACCR and is not significant associated with AT. Therefore, the prediction that highly leveraged companies employ higher levels of conservatism is still not supported after using a dummy variable to measure leverage. The full list of asymmetric timeliness results is shown in Appendix H.

The initial analysis shows that the coefficients on return on asset (ROA), which is used to control profitability, are also contrary with the expectation in the two conservatism models. However, additional analysis using a dummy variable to measure ROA is not performed because alterative measures of firm performance (ROE, PM and MTB) have already been used, with two regression models used to test the relationship between conservatism and performance in Section 5.4.8.

Table 5.32 Results of CONACCR: leverage using binary variables

Variables	Predicted sign	Coefficients	t-statistics
Constant		0.096	**1.85***
BID	+	0.005	0.34
BS	-	-0.001	-0.69
BM	+	-0.000	-1.31
CEODUO	-	0.006	**3.39*****
TURN	+	0.003	**2.73****
SBID	+	-0.004	-0.73
SBS	-	0.004	**2.32****
SBM	+	0.000	0.02
SBQ	+	0.005	**4.60*****
TA	-	-0.006	**-2.08****
SGROW	-	0.001	**2.60****
ROA	+	-0.059	**-2.46****
DUMMY-LEV	+	-0.004	**-2.23****
F-value			**15.96*****
R^2 within			0.0137
N			3876

***p<0.01; **p<0.05; *p<0.10

BID= Board independence, BDGOV= Presence of governmental officials, BS= Board size, BM= Board meetings, CEODUO= CEO duality, TURN= Top management turnover, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, TA= Total assets, SGROW= Sales growth, ROA= Return on assets, LEV= Leverage.

Table 5.33 Results of asymmetric timeliness: leverage using binary variables

Variables	Predicted signs	Coefficients	t-statistic
BID*R	-	-0.012	-0.87
BID*RD	+	0.046	0.84
BS*R	+	0.009	**2.01****
BS*RD	-	0.038	**2.74*****
BM*R	-	-0.000	-1.13
BM*RD	+	-0.001	**-1.84***
CEODUO*R	+	-0.004	**-7.32*****
CEODUO*RD	-	-0.003	-0.38
TURN*R	-	-0.003	-1.14
TURN*RD	+	-0.024	**-5.35*****
SBID*R	-	0.010	**4.62*****
SBID*RD	**+**	**0.013**	**2.47****
SBS*R	+	-0.001	-1.00
SBS*RD	-	-0.033	**-13.30*****
SBM*R	-	-0.001	**-3.95*****
SBM*RD	+	-0.000	-0.08
SBQ*R	-	-0.006	**-5.20*****
SBQ*RD	+	0.027	**1.99****
TA*R	+	0.005	**2.53****
TA*RD	-	0.001	0.55
ROA*R	-	0.003	0.25
ROA*RD	+	-0.146	-1.64
MTB*R	+	-0.002	**-8.36*****
MTB*RD	-	-0.001	**-2.73****
DUMMY-LEV*R	-	0.002	0.79
DUMMY-LEV*RD	+	-0.007	-0.34
F-value			**8.18*****
R^2 within			0.2898
N			3876

***p<0.01; **p<0.05; *p<0.10

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

5.5.6 Ownership concentration using binary variables

In the initial analysis, SHARE*GOV is positively related to ROE and PM and not associated with MTB. Therefore, the hypothesis that ownership concentration negatively moderates the relationship between GOV and firm performance is not supported. As described above in this thesis, 30% shareholdings is a threshold to determine whether the largest shareholders can control the company. Therefore, ownership concentration is measured alternatively as a dummy variable, labelled as DUMMY-SHARE using 30% as a threshold. An observation is coded as 1 if the largest shareholding is more than 30% and coded as 0 otherwise.

Table 5.34, Table 5.35 and Table 5.36 present the results after using dummy variable to measure ownership concentration. Based on the ROE measure of firm performance, consistent with the results in the initial analysis, the coefficient on SHARE*GOV is significantly positive. The coefficients on SHARE*GOV are not significant based on both PM and MTB measures of performance. Therefore, the negative moderating effect of ownership concentration on the effectiveness of firms' governance on firm performance is still not supported.

Table 5.34 Results of ROE measure: moderating effect

		(a) Moderating effect	
Variables	Predicted sign	Coefficients	t-statistics
Constant		-0.021	-0.06
GOV	+	0.024	0.73
DUMMY-SHARE*GOV	-	*0.042*	***3.09******
ST*GOV	**-**	**0.076**	**10.59****
TURN	-	-0.036	**-6.41****
F-value			**83.26****
R^2 within			0.0226
N			3876

*****p<0.01; ****p<0.05; ***p<0.10

SHARE= Ownership concentration, ST= State ownership, GOV=Firms' aggregate governance measure, TURN= Top management turnover.

Table 5.35 Results of PM measure: moderating effect

		(a) Moderating effect	
Variables	Predicted sign	Coefficients	t-statistics
Constant		-0.039	-0.29
GOV	+	0.046	0.89
*DUMMY-SHARE*GOV*	-	*0.007*	*0.49*
ST*GOV	-	-0.022	-0.38
TURN	-	-0.042	**-8.05*** **
F-value			**16.48*** **
R^2 within			0.0290
N			3876

*** p<0.01; ** p<0.05; * p<0.10

SHARE= Ownership concentration, ST= State ownership, GOV=Firms' aggregate governance measure, TURN= Top management turnover.

Table 5.36 Results of MTB measure: moderating effect

		(a) Moderating effect	
Variables	Predicted sign	Coefficients	t-statistics
Constant		6.871	0.45
GOV	+	3.390	**11.43*** **
*DUMMY-SHARE*GOV*	-	*-0.618*	*-0.77*
ST*GOV	-	-4.565	**-6.89*** **
TURN	-	-0.251	-0.99
F-value			**291.52*** **
R^2 within			0.0106
N			3876

*** p<0.01; ** p<0.05; * p<0.10

SHARE= Ownership concentration, ST= State ownership, GOV=Firms' aggregate governance measure, TURN= Top management turnover.

5.5.7 State ownership using binary variables

The results of the initial analysis show that state ownership does not significantly moderate the effectiveness of GOV and conservatism. Most empirical research found that state ownership resulted in lower conservatism. However, Wei (2007) showed that when the

proportion of state-owned shareholdings was relatively small, it had no negative effect on firm performance; however, when the proportion was above 50 percent, state-owned shareholdings had a significant adverse effect on performance. His results indicate that state ownership is not beneficial for companies only when it is over 50%. Therefore, an alternative measure of state ownership is used to test its moderating effect, using 50% as the threshold. The dummy variable is coded as 1 if state ownership is over 50% and coded as 0 otherwise.

Using the alternative measure of state ownership, Table 5.37 and 5.38 show their moderating effect on the relationship between GOV and conservatism. The results indicate that the alternative measure of state ownership is not useful since the coefficients on ST*GOV and ST*GOV*RD are insignificant.

Table 5.37 Results of CONACCR: moderating effect

		Moderating effect	
Variables	Predicated sign	Coefficients	t-statistics
Constant		0.102	**1.72***
GOV	+	0.001	0.17
SHARE*GOV	-	-0.033	**-1.68***
*DUMMY-ST*GOV*	-	*0.005*	*1.25*
TURN	+	0.002	**2.10****
TA	-	-0.005	**-1.87***
ROA	+	-0.063	**-2.61*****
LEV	+	-0.026	**-4.09*****
SGROW	-	0.001	**2.61****
F-value			**7.22*****
R^2 within			0.0140
N			3876

*****p<0.01; ****p<0.05; *p<0.10

SHARE= Ownership concentration, ST= State ownership, GOV=Firms' aggregate governance measure, TURN= Top management turnover, TA= Total assets, SGROW= Sales growth, ROA= Return on assets, LEV= Leverage.

Table 5.38 Results of asymmetric timeliness: moderating effect

		Moderating effect	
Variables	Predicted signs	Coefficients	t-statistics
GOV*R	-	-0.014	**-1.70***
GOV*RD	+	0.039	0.80
SHARE*GOV*R	+	-0.005	**-2.84*****
SHARE*GOV*RD	-	-0.047	-0.86
*DUMMY-ST*GOV*R*	+	*-0.006*	***-4.42*****
*DUMMT-ST*GOV*RD*	-	*0.018*	*0.84*
TURN *R	-	-0.002	-0.92
TURN *RD	+	-0.020	**-3.11*****
TA*R	+	0.004	**2.38****
TA*RD	-	-0.001	-0.23
ROA*R	-	0.006	0.51
ROA*RD	+	-0.117	**-2.11****
LEV*R	-	0.015	**2.30****
LEV*RD	+	0.027	1.50
MTB*R	+	-0.002	**-7.81*****
MTB*RD	-	-0.003	**-2.46****
F-value			**1.57*****
R^2 within			0.2847
N			3876

*****p<0.01; ****p<0.05; *p<0.10

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, SHARE= Largest shareholdings, ST= State ownership, GOV=Firms' aggregate governance measure, TURN= Dummy equals 1 if top management is changed, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

5.5.8 The effect of CEO duality (large companies vs small companies)

The initial analysis shows that CEO duality is positively related to CONACCR and not significantly related to AT. This finding does not support the hypothesis and the recommendation of CSRC that the separation of CEO and chairman roles has a positive effect on conservatism. As introduced in the literature review chapter, Palmon and Wald (2002) found that small companies benefited more from CEO duality while large companies benefited more from the separation of the two roles. Therefore, this study also tests whether

the effect of CEO duality is sensitive to firm size. Table 4.3 in Chapter Four has suggested that in the sample companies, 659 are large companies, 246 are medium companies and 64 are small companies according to Xu and Wang's (1997) definition. Since the number of medium companies and small companies is small, they are combined and categorised as relatively small companies.

Table 5.39 and Table 5.40 show the relationship between corporate governance variables and CONACCR for large companies and small companies respectively. The results indicate that CEO duality is not related to CONACCR in large companies while in small companies, it is significantly positive related to CONACCR. This finding is consistent with Palmon and Wald's (2002) argument that small companies benefited more from CEO duality. The results in Table 5.41 show that, contrary to Palmon and Wald's (2002) argument, large companies benefit more from CEO duality based on the AT measure. The results of Table 5.42 report that the coefficient on CEODUO*R is significantly negative, indicating that CEO duality delays the recognition of good news into earnings. However, the coefficient on CEODUO*RD which reflects asymmetric timeliness is not significant. Therefore, Palmon and Wald's (2002) argument is only supported in small companies based on CONACCR measure in this study.

Table 5.39 Regression result of CONACCR: large companies

Variables	Predicted sign	Coefficients	t-statistics
Constant		0.102	1.57
BID	+	0.040	1.48
BS	-	-0.004	-1.24
BM	+	-0.000	-1.23
CEODUO	-	*0.002*	*1.34*
TURN	+	0.001	1.14
SBID	+	0.003	0.36
SBS	-	0.012	**2.47****
SBM	+	0.000	0.10
SBQ	+	0.008	**3.54*****
TA	-	-0.006	**-2.59****
SGROW	-	0.001	1.25
ROA	+	-0.102	**-4.08****
LEV	+	-0.023	**-8.32*****
F-value			**44.47*****
R^2 within			0.0257
N			2636

***p<0.01; **p<0.05; *p<0.10

BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= CEO duality, TURN= Top management turnover, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, TA= Total assets, SGROW= Sales growth, ROA= Return on assets, LEV= Leverage

Table 5.40 Regression result of CONACCR: small companies

Variables	Predicted sign	Coefficients	t-statistics
Constant		0.102	1.57
BID	+	-0.064	**-1.77***
BS	-	0.003	0.26
BM	+	-0.000	-0.02
CEODUO	+	*0.013*	***3.48****
TURN	+	0.004	1.37
SBID	+	-0.016	**-5.48****
SBS	-	-0.015	**-3.69****
SBM	+	-0.000	-0.36
SBQ	+	0.001	0.62
TA	-	-0.003	-0.99
SGROW	-	0.002	1.48
ROA	+	-0.035	-1.17
LEV	+	-0.033	**-2.20****
F-value			**6.89****
R^2 within			0.0206
N			1240

*** p<0.01; ** p<0.05; * p<0.10

BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= CEO duality, TURN= Top management turnover, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, TA= Total assets, SGROW= Sales growth, ROA= Return on assets, LEV= Leverage

Table 5.41 Results of asymmetric timeliness: large companies

Variables	Predicted signs	Coefficients	t-statistic
BID*R	-	-0.022	-1.15
BID*RD	+	0.104	1.33
BS*R	+	0.005	**1.98****
BS*RD	-	0.065	**2.92*****
BM*R	-	-0.000	-1.20
BM*RD	+	0.001	0.99
CEODUO*R	+	*-0.004*	***-4.12*****
CEODUO*RD	-	*0.023*	***3.63*****
TURN*R	-	-0.008	**-2.27****
TURN*RD	+	-0.028	**-3.36*****
SBID*R	-	0.007	**2.85*****
SBID*RD	+	-0.001	-0.11
SBS*R	+	0.001	0.55
SBS*RD	-	-0.040	**-3.42*****
SBM*R	-	-0.001	**-1.90*****
SBM*RD	+	-0.001	-0.38
SBQ*R	-	-0.004	**-1.76***
SBQ*RD	+	-0.008	**-2.11****
TA*R	+	0.002	1.65
TA*RD	-	0.013	**3.25*****
ROA*R	-	-0.028	**-2.10****
ROA*RD	+	-0.474	**-2.27****
MTB*R	+	-0.002	**-9.71*****
MTB*RD	-	-0.009	**-3.02*****
LEV*R	-	0.016	**2.02****
LEV*RD	+	-0.003	-0.15
F-value			**9.27*****
R^2 within			0.3811
N			2636

***p<0.01; **p<0.05; *p<0.10

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

Table 5.42 Results of asymmetric timeliness: small companies

Variables	Predicted signs	Coefficients	t-statistic
BID*R	-	0.034	**1.66***
BID*RD	+	0.076	**0.33**
BS*R	+	0.018	1.55
BS*RD	-	-0.016	-0.83
BM*R	-	-0.000	-1.24
BM*RD	+	-0.001	-0.30
*CEODUO*R*	-	*-0.007*	***-3.55*** **
*CEODUO*RD*	+	*-0.018*	*-1.53*
TURN*R	-	0.003	0.93
TURN*RD	+	-0.010	-0.89
SBID*R	-	0.017	**5.50****
SBID*RD	+	0.101	**2.76****
SBS*R	+	0.000	0.05
SBS*RD	-	0.038	1.59
SBM*R	-	-0.000	-0.45
SBM*RD	+	-0.001	**-3.13****
SBQ*R	-	-0.007	-0.96
SBQ*RD	+	0.069	**2.67****
TA*R	+	0.010	**4.81****
TA*RD	-	-0.015	-1.05
ROA*R	-	0.022	0.76
ROA*RD	+	0.011	0.74
MTB*R	+	-0.001	-1.50
MTB*RD	-	0.002	1.53
LEV*R	-	0.007	0.81
LEV*RD	+	-0.032	-0.82
F-value			**58.53****
R^2 within			0.1313
N			1240

*** $p<0.01$; ** $p<0.05$; * $p<0.10$

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

Some previous literature indicated that some corporate governance variables (e.g. board size, state ownership) have a non-linear U-shaped effect rather than linear effect on conservatism and firm performance. Therefore, this thesis also tests whether some corporate governance variables that show no significant linear effect on conservatism or firm performance have a U-shaped effect.

5.5.9 Test of U-shaped relationship between BS and conservatism

As introduced in Chapter 2, there are two opposite views on the effect of board size. One group of researchers argued that board size has a positive association with earnings quality and firm performance while the other view suggests that smaller boards are more effective than smaller boards. However, another view predicts the effect of board size to be an inverted U-shaped, with an optimal number of members existing midway (Dwivedi & Jain, 2005). In other words, increases in board size are likely to have a positive effect when boards are smaller and have a negative effect when boards become larger (Golden & Zajac, 2001). Supporting this view, Andres and Vallelado (2008) and Guest (2009) found an inverted U-shaped relationship between board size and performance measured by MTB and ROA respectively. Moreover, Alves (2011) showed a U-shaped relationship between board size and earnings management. However, Coles, Daniel and Naveen (2008) found a U-shaped relationship between board size and Tobin's Q, suggesting that either very small or very large boards are optimal. There is no developed theory for U-shaped relationship; however, some studies have found this relationship. Therefore, this thesis tests whether U-shaped (or inverted U-shaped) relationship exist between board size and conservatism. To test the U-shaped relationship, the squared term of board size is added to the models. The new conservatism models are listed as follows:

Accrual-based Conservatism (CONACCR):

(9) $\text{CONACCR}_{it} = \beta_0 + \beta_1\text{BID}_{it} + \beta_2\text{BS}_{it} + \beta_3\text{BS}^2_{it} + \beta_4\text{BM}_{it} + \beta_5\text{CEODUO}_{it} + \beta_6\text{TURN}_{it} + \beta_7\text{SBID}_{it} + \beta_8\text{SBS}_{it} + \beta_9\text{SBM}_{it} + \beta_{10}\text{SBQ}_{it} + \beta_{11}\text{Firm size}_{it} + \beta_{12}\text{Sales growth}_{it} + \beta_{13}\text{Profitability}_{it} + \beta_{14}\text{Leverage}_{it} + \beta_{15}\text{Industry}_{it} + \varepsilon_{it}$

Asymmetric timeliness (AT):

(10) $E_{it}/P_{it-1} = \beta_0 + \beta_1 R_{it} + \beta_2 D_{it} + \beta_3 R_{it}*D_{it} + \beta_4 BID_{it} + \beta_5 R_{it}*BID_{it} + \beta_6 D_{it}*BID_{it} + \beta_7 R_{it}*D_{it}*BID_{it} + \beta_8 BS_{it} + \beta_9 R_{it}*BS_{it} + \beta_{10} D_{it}*BS_{it} + \beta_{11} R_{it}*D_{it}*BS_{it} + \beta_{12} BS^2_{it} + \beta_{13} R_{it}*BS^2_{it} + \beta_{14} D_{it}*BS^2_{it} + \beta_{15} R_{it}*D_{it}*BS^2_{it} + \beta_{16} BM_{it} + \beta_{17} R_{it}*BM_{it} + \beta_{18} D_{it}*BM_{it} + \beta_{19} R_{it}*D_{it}*BM_{it} + \beta_{20} CEODUO_{it} + \beta_{21} R_{it}*CEODUO_{it} + \beta_{22} D_{it}*CEODUO_{it} + \beta_{23} R_{it}*D_{it}*CEODUO_{it} + \beta_{24} TURN_{it} + \beta_{25} R_{it}*TURN_{it} + \beta_{26} D_{it}*TURN_{it} + \beta_{27} R_{it}*D_{it}*TURN_{it} +$ *supervisory board attributes and control variables* $+ \varepsilon_{it}$

Table 5.43 presents the results for the CONACCR model. The results show that the coefficient on BS^2 is significantly positive and the coefficient on BS is significantly negative, revealing a U-shaped relationship between board size and conservatism. The reflection point is around 9 meetings[6]. Board size is initially negatively related to CONACCR, but after this point, board size begins to be positively related to CONACCR.

[6] The reflection point can be achieved by using *utest* syntax in STATA.

Table 5.43 Results on the test of U-shaped relationship between BS and CONACCR

Variables	Predicted sign	Coefficients	t-statistic
constant		0.360	**5.82*** **
BID	+	-0.004	-0.37
BS		*-0.245*	***-4.43*** **
BS^2		*0.057*	***4.49*** **
BM	+	-0.000	-1.45
CEODUO	**-**	0.006	**3.42*** **
TURN	+	0.002	**2.36** **
SBID	+	-0.004	-0.88
SBS	-	0.003	2.53
SBM	+	0.000	0.06
SBQ	+	0.005	**3.92*** **
TA	-	-0.005	**-1.94***
SGROW	-	0.001	**2.70** **
ROA	+	-0.063	**-2.47** **
LEV	+	-0.027	**-4.19*** **
F-value			**66.05*** **
R^2 within			0.0177
N			3876

*** p<0.01; ** p<0.05; * p<0.10

BID= Board independence, BS= Board size, BS^2= Square term of board size; BM= Board meetings, CEODUO= CEO duality, TURN= Top management turnover, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, TA= Total assets, SGROW= Sales growth, ROA= Return on assets, LEV= Leverage

The results of Table 5.44 show that the coefficients on BS*RD and BS^2*RD are significantly negative and positive respectively. This finding indicates that consistent with the CONACCR measure, the U-shaped relationship also exists between BS and AT measure of conservatism. This finding indicates that in Chinese listed companies, board size results in lower level of conservatism initially, but after a certain point, board size improves the employment of conservatism. This result is not consistent with the view that a medium size board, which has a balance between benefits and costs, is optimal (Dwivedi & Jain, 2005). However, it is consistent with findings of Coles et al. (2008) which suggested that either very small or very large boards are optimal. They reported that the differences between complex and simple

companies are the reason for this relationship. Complex companies usually need bigger boards while simple companies need smaller boards. Thus, board size has positive effect on complex companies and has negative effect on simple companies. This finding supports arguments of Gillan, Hartzell, and Starks (2003) that regulatory actions applying one-size-fits-all criteria are not appropriate.

Table 5.44 Results on the test of U-shaped relationship between BS and AT

Variables	Predicted signs	Coefficients	t-statistic
BID*R	-	-0.010	-0.74
BID*RD	**+**	0.091	**1.91***
BS*R		0.051	**4.58*****
BS*RD		*-0.149*	***-2.27****
BS^2* R		-0.018	**-4.53*****
BS^2* RD		*0.077*	***3.49*****
BM*R	-	-0.000	-0.98
BM*RD	+	-0.001	-1.24
CEODUO*R	+	-0.004	**-5.85*****
CEODUO*RD	-	-0.005	-0.65
TURN*R	-	-0.004	-1.26
TURN*RD	+	-0.021	**-2.79*****
SBID*R	-	0.011	**5.20*****
SBID*RD	+	0.009	1.19
SBS*R	+	-0.000	-0.74
SBS*RD	-	-0.037	**-14.72*****
SBM*R	-	-0.001	**-4.13*****
SBM*RD	+	-0.002	-0.40
SBQ*R	-	-0.006	**-4.06*****
SBQ*RD	+	0.030	**2.18****
TA*R	+	0.005	**2.41****
TA*RD	-	-0.002	-0.57
ROA*R	-	0.005	0.45
ROA*RD	+	-0.124	**-1.92***
MTB*R	+	-0.002	**-8.04*****
MTB*RD	-	-0.003	**-3.77*****
LEV*R	-	0.014	**2.64*****
LEV*RD	+	0.038	1.36
F-value			**2.05e+09*****

R^2 within	0.2924
N	3876

***p<0.01; **p<0.05; *p<0.10

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, BID= Board independence, BS= Board size, BS^2= Square term of board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

5.5.10 Test of U-shaped relationship between BM and conservatism

In general, the number of board meetings is a rough proxy for board diligence and diligent directors are expected to be effective in monitoring management. However, Jensen (1993) believed that the board of directors may be forced to hold more frequent meetings during times of difficult challenges. That is, the extra board meetings are not held to improve corporate governance, but a reaction to difficult times (Tao & Hu, 2012). In addition, Tao and Hu (2012) argued that on the one hand, low number of board meetings indicates that board members exchange too little information for company decision-making, resulting in ineffective monitoring. On the other hand, high number of board meetings is considered to result in low efficiency of company communication, which causes a delay of decision-making and a waste of human and material resources. Therefore, it is expected that an optimum number of board meetings exist. Tao and Hu (2012) found that there was a U-shaped relationship between the number of board meetings and agency costs, with an optimum frequency of meetings making the lowest agency costs. This thesis tests whether a U-shaped relationship (or inverted U-shaped relationship) exists between the frequency of board meetings and conservatism in Chinese companies.

The results of Table 5.45 show that the coefficient on BM is insignificant. Therefore, there is no U-shaped relationship between BM and conservatism in the CONACCR model. The U-shaped relationship is also not supported in the AT model since neither coefficient on BM*RD and BM^2*RD is significant.

Table 5.45 Results on the test of U-shaped relationship between BM and CONACCR

Variables	Predicted sign	Coefficients	t-statistics
Constant		0.086	**1.76***
BID	+	0.004	0.32
BS	-	-0.002	-0.88
BM		*0.001*	*1.57*
BM^2		*-0.000*	***-2.26****
CEODUO	-	0.006	**3.50*****
TURN	+	0.002	**2.40****
SBID	+	-0.003	-0.66
SBS	-	0.003	**2.26****
SBM	+	-0.000	-0.10
SBQ	+	0.005	**4.18*****
TA	-	-0.005	**-1.92***
SGROW	-	0.001	**2.58****
ROA	+	-0.063	**-2.48****
LEV	+	-0.027	**-4.08*****
F-value			**15.17*****
R^2 within			0.0165
N			3876

***p<0.01; **p<0.05; *p<0.10

BID= Board independence, BS= Board size, BM= Board meetings, BM^2= Square term of board meetings, CEODUO= CEO duality, TURN= Top management turnover, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, TA= Total assets, SGROW= Sales growth, ROA= Return on assets, LEV= Leverage

Table 5.46 Results on the test of U-shaped relationship between BM and AT

Variables	Predicted signs	Coefficients	t-statistic
BID*R	-	-0.013	-0.97
BID*RD	**+**	0.117	**2.49****
BS*R	+	0.008	**2.17****
BS*RD	-	0.047	**3.23*****
BM*R		0.000	0.13
*BM*RD*		*0.008*	*0.74*
BM^2*R		-0.000	-0.15
*BM^2*RD*		*-0.001*	*-1.24*
CEODUO*R	+	-0.004	**-4.63*****
CEODUO*RD	-	-0.006	-0.77
TURN*R	-	-0.003	-1.19
TURN*RD	+	-0.021	**-3.67*****
SBID*R	-	0.011	**4.56*****
SBID*RD	+	0.013	1.23
SBS*R	+	-0.001	-1.25
SBS*RD	-	-0.033	**-11.49*****
SBM*R	-	-0.001	**-3.63*****
SBM*RD	+	-0.001	-0.28
SBQ*R	-	-0.006	**-4.54*****
SBQ*RD	+	0.030	**1.97****
TA*R	+	0.004	**2.40****
TA*RD	-	-0.002	-0.57
ROA*R	-	0.006	0.56
ROA*RD	+	-0.140	-1.64
MTB*R	+	-0.002	**-7.78*****
MTB*RD	-	-0.002	**-4.79*****
LEV*R	-	0.016	**2.90*****
LEV*RD	+	0.028	1.06
F-value			**8.07*****
R^2 within			0.2936
N			3876

*****p<0.01; ****p<0.05; ***p<0.10

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, BID= Board independence, BS= Board size, BM= Board meetings, BM^2= Square term of board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN=

Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage

5.5.11 Test of U-shaped relationship between SBID and conservatism

Previous literature indicated that the presence of independent supervisors was important to ensure that the supervisory board could perform its monitoring duty independently. However, Andres and Vallelado (2008) argued that the information and council of inside directors were also important. They found an inverted U-shaped relationship between the proportion of outside directors and firm performance. Their results showed that the incorporation of outside directors increased firm value, however, firm value started to decrease after reaching a high proportion. Based on the idea that a very high proportion of independent supervisors is not beneficial for the company, this thesis examines whether SBID has an inverted U-shaped effect on conservatism and performance.

As Table 5.47 and Table 5.48 shows, there is no U-shaped or an inverted U-shaped relationship between SBID and conservatism since the coefficients on SBID, $SBID^2$, SBID*RD and $SBID^2$*RD are not significant.

Table 5.47 Results on the test of U-shaped relationship between SBID and CONACCR

Variables	Predicted sign	Coefficients	t-statistics
Constant		0.097	**1.86***
BID	+	0.005	0.37
BS	-	-0.002	-0.97
BM	+	-0.000	-1.39
CEODUO	-	0.006	**3.51*****
TURN	+	0.002	**2.43****
SBID		*-0.002*	*-0.11*
$SBID^2$		*-0.005*	*-0.24*
SBS	-	0.004	**2.22****
SBM	+	0.000	0.08
SBQ	+	0.005	**4.28*****
TA	-	-0.005	**-1.96***
SGROW	-	0.001	**2.43****
ROA	+	-0.063	**-2.48****
LEV	+	-0.027	**-4.18*****
F-value			**7.65*****
R^2 within			0.0159
N			3876

*****p<0.01; ****p<0.05**; ***p<0.10**

BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= CEO duality, TURN= Top management turnover, SBID= Supervisory board independence, $SBID^2$= Square term of supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, TA= Total assets, SGROW= Sales growth, ROA= Return on assets, LEV= Leverage

Table 5.48 Results on the test of U-shaped relationship between SBID and AT

Variables	Predicted signs	Coefficients	t-statistic
BID*R	-	-0.011	-0.98
BID*RD	**+**	0.115	**2.49****
BS*R	+	0.008	**2.64*****
BS*RD	-	0.044	**2.79*****
BM*R	-	-0.000	-1.14
BM*RD	+	-0.001	-1.08
CEODUO*R	+	-0.004	**-6.13*****
CEODUO*RD	-	-0.007	-1.13
TURN*R	-	-0.003	-1.19
TURN*RD	+	-0.023	**-3.56*****
SBID*R		-0.014	-1.23
*SBID*RD*		*-0.004*	*-0.10*
$SBID^2$*R		0.051	**2.15****
*$SBID^2$*RD*		*0.034*	*0.61*
SBS*R	+	0.001	0.75
SBS*RD	-	-0.031	**-7.35*****
SBM*R	-	-0.001	**-4.09*****
SBM*RD	+	-0.000	-0.10
SBQ*R	-	-0.006	**-4.30*****
SBQ*RD	+	0.025	**1.83***
TA*R	+	0.004	**2.38****
TA*RD	-	-0.002	-0.54
ROA*R	-	0.006	0.53
ROA*RD	+	-0.122	**-1.85***
MTB*R	+	-0.002	**-7.69*****
MTB*RD	-	-0.002	**-4.81*****
LEV*R	-	0.015	**2.75*****
LEV*RD	+	0.027	0.99
F-value			**8.27*****
R^2 within			0.2917
N			3876

*****p<0.01; ****p<0.05; *p<0.10

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO

and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, $SBID^2$= Square term of supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

Table 5.49, Table 5.50 and Table 5.51 show the results on the test of U-shaped relationship between SBID and firm performance using three different measures. To support a U-shaped (or an inverted U-shaped) relationship, both coefficients on SBID and $SBID^2$ need to be significant. Therefore, as Table 5.49 and Table 5.51 indicate, the relationship between SBID and firm performance measured by ROE and MTB is not U-shaped or inverted U-shaped. However, based on the PM measure, the coefficient on $SBID^2$ is positively significant and the coefficient on SBID is negatively significant, indicating a U-shaped relationship between SBID and PM, with a reflection point at 24%. That is, the proportion of independent supervisors is initially negatively related to PM, but after this point, supervisory board independence begins to be positive related to PM. Inconsistent with Andres and Vallelado (2008) who found an inverted U-shaped relationship between board independence and firm value, this result suggests that a very high proportion of independent supervisors is beneficial for Chinese companies.

Table 5.49 Results on the test of U-shaped relationship between SBID and ROE

Variables	Predicted sign	Coefficients	t-statistic
constant		0.065	0.23
BID	+	-0.075	-1.21
BS	**-**	-0.033	**-3.36*****
BM	+	0.002	**2.54****
CEODUO	-	-0.010	-1.42
TURN	-	-0.037	**-6.23*****
SBID		*0.011*	*0.79*
SBID^2		*-0.007*	*-0.16*
SBS	-	-0.006	-0.38
SBM	+	0.000	0.12
SBQ	**+**	0.014	**3.84*****
F-value			**3.09*****
R^2 within			0.0218
N			3876

*****p<0.01; ****p<0.05; ***p<0.10

BID= Board independence, BDGOV= Dummy equals 1 if government officers are independent directors, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBID^2= Square term of supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification.

Table 5.50 Results on the test of U-shaped relationship between SBID and PM

Variables	Predicted sign	Coefficients	t-statistic
constant		0.027	0.20
BID	+	-0.010	-0.76
BS	**-**	-0.026	**-1.96***
BM	+	0.003	**3.31****
CEODUO	-	-0.001	-0.12
TURN	-	-0.042	**-7.75*****
SBID		*-0.059*	***-2.64*****
SBID^2		*0.120*	***2.17****
SBS	**-**	-0.011	**-2.40****
SBM	+	-0.001	-0.58
SBQ	+	0.002	0.14
F-value			**25.75*****
R^2 within			0.0324
N			3876

***p<0.01; **p<0.05; *p<0.10

BID= Board independence, BDGOV= Dummy equals 1 if government officers are independent directors, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBID^2= Square term of supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification.

Table 5.51 Results on the test of U-shaped relationship between SBID and MTB

Variables	Predicted sign	Coefficients	t-statistic
constant		6.542	0.52
BID	+	2.889	**2.30****
BS	-	0.385	0.59
BM	+	0.016	0.19
CEODUO	-	-0.360	**-2.70*****
TURN	-	-0.244	-0.90
SBID		*1.239*	*1.03*
SBID^2		*-2.899*	***2.17****
SBS	-	0.045	0.08
SBM	+	0.069	0.80
SBQ	+	0.333	**3.12*****
F-value			**2.82*****
R^2 within			0.0078
N			3876

***p<0.01; **p<0.05; *p<0.10

BID= Board independence, BDGOV= Dummy equals 1 if government officers are independent directors, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, $SBID^2$= Square term of supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification.

5.5.12 Test of U-shaped relationship between SBM, conservatism and firm performance

The results of initial analysis and additional analysis using a binary measure indicated that the frequency of supervisory board meetings has no significant effect on conservatism and firm performance. This thesis also examines whether the effect of the frequency of supervisory board meetings (SBM) is U-shaped.

Table 5.52 and Table 5.53 show the results on the test of U-shaped relationship between SBM and conservatism. The insignificant coefficients on SBM, SBM^2, SBM*RD and

SBM^2*RD indicate that the U-shaped relationship is not supported between supervisory board meetings and conservatism based on both measures of conservatism.

Table 5.52 Results on the test of U-shaped relationship between SBM and CONACCR

Variables	Predicted sign	Coefficients	t-statistics
Constant		0.101	**1.83***
BID	+	0.005	0.40
BS	-	-0.002	-0.90
BM	+	-0.000	-1.60
CEODUO	-	0.006	**3.44*****
TURN	+	0.003	**2.58****
SBID	+	-0.004	-0.69
SBS	-	0.003	**2.58****
SBM		*-0.002*	*-0.83*
SBM^2		*0.000*	*0.98*
SBQ	+	0.005	**4.07*****
TA	-	-0.005	**-1.94***
SGROW	-	0.001	**2.43****
ROA	+	-0.063	**-2.50****
LEV	+	-0.027	**-4.27*****
F-value			**16.55*****
R^2 within			0.0160
N			3876

*****p<0.01; ****p<0.05**; ***p<0.10

BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= CEO duality, TURN= Top management turnover, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBM^2= Square term of supervisory board meetings, SBQ= Supervisory board qualification, TA= Total assets, SGROW= Sales growth, ROA= Return on assets, LEV= Leverage

Table 5.53 Results on the test of U-shaped relationship between SBM and AT

Variables	Predicted signs	Coefficients	t-statistic
BID*R	-	-0.012	-0.92
BID*RD	**+**	0.110	**2.04****
BS*R	+	0.009	**2.10****
BS*RD	-	0.041	**3.23*****
BM*R	-	-0.000	-1.24
BM*RD	+	-0.001	-0.98
CEODUO*R	+	-0.004	**-5.95*****
CEODUO*RD	-	-0.006	-0.96
TURN*R	-	-0.003	-1.18
TURN*RD	+	-0.023	**-3.36*****
SBID*R	-	0.010	**4.61*****
SBID*RD	+	0.016	1.29
SBS*R	+	-0.001	-0.97
SBS*RD	-	-0.032	**-13.62*****
SBM*R		0.002	0.64
*SBM*RD*		*-0.008*	*-0.39*
SBM^2*R		-0.000	**-0.95**
*SBM^2*RD*		*0.001*	*0.36*
SBQ*R	-	-0.006	**-4.35*****
SBQ*RD	+	0.026	**1.96***
TA*R	+	0.004	**2.34****
TA*RD	-	-0.002	-0.46
ROA*R	-	0.006	0.55
ROA*RD	+	-0.125	**-1.89***
MTB*R	+	-0.002	**-8.02*****
MTB*RD	-	-0.002	**-2.82*****
LEV*R	-	0.015	**2.77*****
LEV*RD	+	0.028	1.16
F-value			**3.92*****
R^2 within			0.2910
N			3876

*****p<0.01; ****p<0.05; *p<0.10

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBM^2= Square term of supervisory board meetings, SBQ=

Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

As Table 5.55 reports, the U-shaped relationship does not exist between SBM and firm performance as measured by PM. However, the results of Table 5.54 and Table 5.55 show that both the coefficients on SBM and SBM^2 are significant based on ROE and MTB measures. The relationship between SBM and ROE is U-shaped while the relationship between SBM and MTB is inverted U-shaped. The reflection points of ROE model and MTB model are around 5 meetings and 6 meetings respectively. This finding indicates that using ROE to measure performance, more frequent supervisory board meetings initially reduces firm performance, but after the reflection point (5 meetings); it starts to improve firm performance. In contrast, for the MTB measure, more frequent meetings initially is positively related to firm performance and after the reflection point (6 meetings), it is negatively associated with firm performance.

The inverted U-shaped relationship between SBM and MTB is consistent with Tao and Hu (2012) who found that there was an optimum frequency of meetings. This finding supports the argument that low number of board meetings results in ineffective monitoring because of too little exchange for company decision making while high number of board meetings is not good either due to the low efficiency of company communication. In contrast, based on the ROE measure, either low frequency of meetings or high frequency of meetings results in better firm performance and a moderate number of meetings leads to poorer performance. Therefore, the effect of SBM on firm performance is sensitive to performance measures.

Table 5.54 Results on the test of U-shaped relationship between SBM and ROE

Variables	Predicted sign	Coefficients	t-statistic
constant		0.100	0.34
BID	+	-0.069	-1.13
BS	**-**	-0.033	**-3.25*****
BM	+	0.002	**2.49****
CEODUO	-	-0.011	-1.49
TURN	-	-0.037	**-6.14*****
SBID		0.008	0.93
SBS	-	-0.008	-0.50
SBM		*-0.017*	***-2.58****
SBM^2		*0.002*	***3.57*****
SBQ	**+**	0.015	**3.87*****
F-value			**2.02*****
R^2 within			0.0229
N			3876

*****p<0.01; ****p<0.05; ***p<0.10

BID= Board independence, BDGOV= Dummy equals 1 if government officers are independent directors, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBM^2= Square term of supervisory board meetings, SBQ= Supervisory board qualification.

Table 5.55 Results on the test of U-shaped relationship between SBM and PM

Variables	Predicted sign	Coefficients	t-statistic
constant		0.042	0.32
BID	+	-0.008	-0.56
BS	**-**	-0.026	**-1.93***
BM	+	0.003	**3.41****
CEODUO	-	-0.001	-0.23
TURN	-	-0.042	**-7.78*****
SBID	**+**	-0.005	-0.32
SBS	**-**	-0.013	**-2.67*****
SBM		*-0.007*	*-0.85*
SBM^2		*0.001*	*0.95*
SBQ	+	0.002	0.13
F-value			**34.99*****
R^2 within			0.0319
N			3876

*****p<0.01; ****p<0.05; ***p<0.10

BID= Board independence, BDGOV= Dummy equals 1 if government officers are independent directors, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBM^2= Square term of supervisory board meetings, SBQ= Supervisory board qualification.

Table 5.56 Results on the test of U-shaped relationship between SBM and MTB

Variables	Predicted sign	Coefficients	t-statistic
constant		5.404	0.42
BID	+	2.723	**2.20****
BS	-	0.364	0.56
BM	+	0.021	0.25
CEODUO	-	-0.347	**-2.70*****
TURN	-	-0.254	-0.94
SBID	+	-0.057	-0.08
SBS	-	0.135	0.23
SBM		*0.587*	***1.85****
SBM^2		*-0.050*	***-2.18****
SBQ	+	0.325	**3.02*****
F-value			**5.07*****
R^2 within			0.0090
N			3876

***p<0.01; **p<0.05; *p<0.10

BID= Board independence, BDGOV= Dummy equals 1 if government officers are independent directors, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBM^2= Square term of supervisory board meetings, SBQ= Supervisory board qualification.

5.5.13 Test of U-shaped effect of ownership structure on conservatism and firm performance

There are two competing theories regarding the effects of managerial ownership on managers' incentives: the alignment effect and the entrenchment effect. Traditional agency theory believes that managers' ownership helps in aligning their interests with those of the shareholders (Jensen & Meckling, 1976). The alignment effect of the largest shareholder is similar to that of the manager. Shleifer and Vishny (1997) argued that ownership concentration creates greater monitoring by controlling shareholders. Xiong et al. (2008) pointed out that with increase in ownership, the shared income of large shareholders and their control power will increase, thus creating an incentive to monitor management's commitment

to better corporate performance. In contrast, the entrenchment effect suggests that controlling shareholders have greater control over firms and thus can easily expropriate other shareholders' income for their own private interests (Xiong et al., 2008). The extant literature has examined the positive and negative effect of ownership concentration. Wang (2006) found an inverted U-shaped relationship between family ownership and earnings informativeness. McConnell and Servaes (1990) reported an inverted U-shaped relationship between insider ownership and firm value measured by Tobin's Q. The explanation for this finding is that, initially, the alignment effect dominates the entrenchment effect; however, beyond a certain point, the entrenchment effect dominates (Ding et al., 2007). The initial analysis of this study indicates that ownership concentration does not have a significant linear moderating effect on the effectiveness of firms' governance on firm performance. Thus, this thesis adds the square term of ownership concentration to the model to test whether the U-shaped or inverted U-shaped moderating effect exist. The new performance model is shown as follows:

(11) $\text{Performance}_{it} = \beta_0 + \beta_1 \text{GOV}_{it} + \beta_2 \text{SHARE}_{it} * \text{GOV}_{it} + \beta_3 \text{SHARE}^2_{it} * \text{GOV}_{it} + \beta_4 \text{ST}_{it} * \text{GOV}_{it} + \beta_5 \text{TURN}_{it} + \beta_6 \text{Firm size}_{it} + \beta_7 \text{Leverage}_{it} + \beta_8 \text{Industry}_{it} + \varepsilon_{it}$

The following three tables show the results based on three different measures of firm performance, i.e. ROE, PM and MTB. In the ROE model (Table 5.57), the significantly negative coefficient on SHARE^2*GOV and significantly positive coefficient on SHARE*GOV reveal an inverted U-shaped moderating effect of ownership concentration on the relationship between firms' governance and ROE. The reflection point of this model is 51%. Ownership concentration initially results in better firm performance measured by ROE, but after this point, more ownership concentration reduces firm performance. This result is consistent with McConnell and Servaes's (1990) findings that initially, the alignment effect of ownership concentration dominates the entrenchment effect; however, over a certain point the entrenchment effect dominates. This outcome suggests that a high concentrated ownership is not good, but low concentrated ownership is not good either for Chinese listed companies. A certain level of ownership concentration is optimal. The results of Table 5.58 and Table 5.59 indicate that the U-shaped effect is not supported in PM and MTB models.

Table 5.57 Test of U-shaped effect of ownership concentration: ROE model

		Moderating effect	
Variables	Predicated sign	Coefficients	t-statistics
Constant		-0.054	-0.17
GOV	+	-0.218	**-3.02*** **
SHARE*GOV		*1.324*	***4.31*** **
SHARE^2*GOV		*-1.289*	***-2.96*** **
ST*GOV	-	0.024	**1.75***
TURN	-	-0.036	**-6.18*** **
F-value			**20.28*** **
R^2 within			0.0293
N			3876

*** p<0.01; ** p<0.05; * p<0.10

SHARE= Ownership concentration, SHARE^2= Square term of ownership concentration, ST= State ownership, GOV=Firms' aggregate governance measure, TURN= Top management turnover

Table 5.58 Test of U-shaped effect of ownership concentration: PM model

		Moderating effect	
Variables	Predicated sign	Coefficients	t-statistics
Constant		-0.053	-0.38
GOV	+	-0.017	-0.22
*SHARE*GOV*		*0.268*	*1.41*
*SHARE^2*GOV*		*-0.095*	*-0.38*
ST*GOV	-	-0.070	-1.44
TURN	-	-0.041	**-7.90*** **
F-value			**68.86*** **
R^2 within			0.0308
N			3876

*** p<0.01; ** p<0.05; * p<0.10

SHARE= Ownership concentration, SHARE^2= Square term of ownership concentration, ST= State ownership, GOV=Firms' aggregate governance measure, TURN= Top management turnover

Table 5.59 Test of U-shaped effect of ownership concentration: MTB model

		Moderating effect	
Variables	Predicated sign	Coefficients	t-statistics
Constant		7.076	0.46
GOV	+	4.556	**6.33*** **
SHARE*GOV		*-6.869*	***-1.85****
*$SHARE^2$*GOV*		*6.459*	*1.46*
ST*GOV	-	-4.629	**-12.08*** **
TURN	-	-0.249	-0.99
F-value			**18.50*** **
R^2 within			0.0105
N			3876

*** p<0.01; ** p<0.05; * p<0.10

SHARE= Ownership concentration, $SHARE^2$= Square term of ownership concentration, ST= State ownership, GOV=Firms' aggregate governance measure, TURN= Top management turnover

State shareholders have political and financial goals. In order to maximize both its political and financial goals, state shareholders provide both the 'grabbing' and 'helping hands' to the firms. Tian (2001) indicated that the 'grabbing hand' induced lower firm performance with an increase of state ownership before a certain point. This is because when state shareholdings are small, political goals overcome financial goals. However, when the state's financial interests become adequately large, it will provide 'helping hands', resulting in higher firm value (Tian, 2001). Consistent with Tian (2001), Yu (2013) and Wei et al. (2005) found a U-shaped relationship between state ownership and firm performance. Sun et al. (2002) also found a U-shaped relationship between the two variables but it was inverted, indicating that there is an optimal level of state ownership. Their explanation is that high levels of state shareholdings mean too much control and interference by the government while low levels of state shareholdings mean too little support from the government.

The initial analysis shows that state ownership does not have a significant influence on firms' governance on the employment of conservatism. Therefore, this thesis tests whether the U-shaped moderating effect of state ownership exist. The results of Table 5.60 indicate that state ownership has an inverted U-shaped influence on the effectiveness of firms' governance on

conservatism based on CONACCR measure. This finding is consistent with the argument of Sun et al. (2002) that there is an optimal level of state ownership. State ownership has a positive moderating effect initially, but after the reflection point (33%), it starts to have a negative moderating effect. This outcome indicates that too much state ownership is not good for the employment of conservatism but too little state ownership does not result in a higher level of conservatism either. The optimal state ownership is in between these levels. The inverted U-shaped effect is not supported in the AT model since the coefficient on ST^2*GOV*RD is not significant.

Table 5.60 Test of U-shaped effect of state ownership: CONACCR model

		Moderating effect	
Variables	Predicated sign	Coefficients	t-statistics
Constant		0.101	1.62
GOV	+	-0.008	-1.49
SHARE*GOV	-	-0.020	-0.87
ST*GOV		*0.065*	***12.22****
ST^2*GOV		*-0.100*	***-3.35****
TURN	+	0.002	**2.03****
TA	-	-0.005	**-1.77***
ROA	+	-0.062	**-2.60****
LEV	+	-0.025	**-4.17****
SGROW	-	0.001	**2.40****
F-value			**79.44****
R^2 within			0.0144
N			3876

*** p<0.01; ** p<0.05; * p<0.10

SHARE= Ownership concentration, ST= State ownership, ST^2= Square term of state ownership, GOV=Firms' aggregate governance measure, TURN= Top management turnover, TA= Total assets, SGROW= Sales growth, ROA= Return on assets, LEV= Leverage.

Table 5.61 Test of U-shaped effect state ownership: AT model

		(a) Moderating effect	
Variables	Predicted signs	Coefficients	t-statistics
GOV*R	-	-0.012	**-1.95***
GOV*RD	+	0.049	0.95
SHARE*GOV*R	-	-0.011	**-2.16****
SHARE*GOV*RD	+	-0.068	-1.44
ST*GOV*R		0.011	0.56
ST*GOV*RD		*-0.125*	***-1.95****
ST^2*GOV*R		-0.020	-0.59
*ST^2*GOV*RD*		*0.257*	*1.60*
TURN *R	-	-0.002	-0.90
TURN *RD	+	-0.022	**-3.22*****
TA*R	+	0.004	**2.32****
TA*RD	-	-0.001	-0.24
ROA*R	-	0.007	0.51
ROA*RD	+	-0.115	**-2.28****
LEV*R	-	0.015	**2.33****
LEV*RD	+	0.030	1.56
MTB*R	+	-0.002	**-7.42*****
MTB*RD	-	-0.003	**-2.69*****
F-value			**5.05*****
R^2 within			0.2842
N			3876

***p<0.01; **p<0.05; *p<0.10

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, SHARE= Largest shareholdings, ST= State ownership, ST^2= Square term of state ownership, GOV=Firms' aggregate governance measure, TURN= Dummy equals 1 if top management is changed, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

The results of initial analyses indicate that state ownership has a negative moderating effect on the effectiveness of firms' governance on firm performance as measured by MTB. However, based on ROE and PM measures, state ownership does not have any moderating effect. Therefore, this thesis also tests whether U-shaped effect of state ownership exist using ROE and PM measures.

As Table 5.62 shows, state ownership does not have a U-shaped moderating influence in ROE model. However, the results of Table 5.63 indicate that the U-shaped moderating effect of state ownership exists when the PM measure is used. This finding suggests that state ownership does negatively moderate the relationship between GOV and PM initially, but after a certain point (34%), state ownership starts to have a positive moderating effect. This finding is consistent with Tian (2001), Yu (2013) and Wei et al. (2005) who found a U-shaped relationship between state ownership and firm performance. This outcome supports the notion that, state shareholders provide the 'grabbing hand' and lead to lower firm performance with an increase of state ownership before a certain point, because political goals overcome financial goals when state shareholdings are small. However, when the state's financial interests become adequately large, it will provide 'helping hands', leading to better firm performance. This thesis reveals that a higher proportion of state ownership is positive in improving firm performance. As Yu (2013) indicated, investor protection is poor and enforcement is weak in China. The large state shareholders are able to provide support in terms of resources and financing for companies. The Split Share Structure Reform was announced in 2005 to remove the trading restriction on non-tradable state shares. The findings of this thesis indicate that the reform has reduced the negative effects of state shares.

Table 5.62 Test of U-shaped effect of state ownership: ROE model

		Moderating effect	
Variables	Predicated sign	Coefficients	t-statistics
Constant		-0.046	-0.14
GOV	+	-0.054	-1.33
SHARE*GOV	-	0.345	**5.62*****
*ST*GOV*		*-0.037*	*-0.61*
*ST^2*GOV*		*0.099*	*1.05*
TURN	-	-0.035	**-6.23*****
F-value			**36.29*****
R^2 within			0.0268
N			3876

*****p<0.01; ****p<0.05; ***p<0.10

SHARE= Ownership concentration, ST= State ownership, ST^2= Square term of state ownership, GOV=Firms' aggregate governance measure, TURN= Top management turnover

Table 5.63 Test of U-shaped effect of state ownership: PM model

		Moderating effect	
Variables	Predicated sign	Coefficients	t-statistics
Constant		-0.044	-0.31
GOV	+	0.029	0.42
SHARE*GOV	-	*0.134*	***1.95****
ST*GOV		*-0.347*	***-2.62****
ST^2*GOV		*0.514*	***2.67****
TURN	-	-0.041	**-7.84****
F-value			**17.55****
R^2 within			0.0321
N			3876

****p<0.01; ***p<0.05; *p<0.10

SHARE= Ownership concentration, ST= State ownership, ST^2= Square term of state ownership, GOV=Firms' aggregate governance measure, TURN= Top management turnover

5.6 Conclusion

This chapter presents the empirical results obtained from the statistical tests. The descriptive statistics indicate that although many companies have complied with the recommendation of CSRC to improve the effectiveness of the board of directors and the supervisory board, there are still some companies not meeting the recommendations. Multivariate analysis was performed to test the effects of corporate governance on conservatism and firm performance. Overall, the results on the relationship between corporate governance and conservatism show that, based on the CONACCR measure, only supervisory board qualification (SBQ) has the predicted effect on conservatism. When AT is used to measure conservatism, board independence (BID), top management turnover (TURN), supervisory board size (SBS) and supervisory qualification (SBQ) are significantly associated with conservatism in the predicted direction. Therefore, the relationship between internal governance mechanisms and conservatism is sensitive to the measure of conservatism. In the test of the relation between corporate governance and firm performance, hypotheses relating to the effect of board size, board meetings and top management turnover on firm performance are supported based on both ROE and PM measures. However, all these hypotheses are not supported based on the MTB measure. In addition to the above hypotheses, the hypotheses on supervisory

qualification and supervisor board size are supported in ROE and PM models, respectively. Based on the MTB measure, the hypotheses relating to board independence (BID), CEO duality (CEODUO) and supervisory board qualifications (SBQ) are supported. Conservatism is expected to have strong positive effects on firm performance. This strong positive relation is found in the AT model when PM is used to measure firm performance.

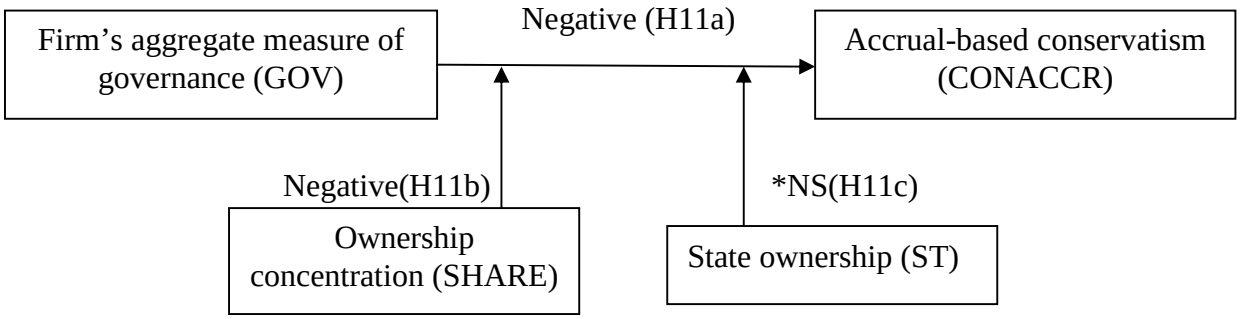
Results testing the moderating effect of ownership structure show that the relationship between firms' governance and AT is insignificant and ownership concentration and state ownership do not significantly influence the effectiveness of GOV on AT conservatism. For the CONACCR model, contrary to the prediction, the results for the main effects show that firms' governance is negatively related to conservatism. In the test of moderating effects, when GOV is interacted with ownership concentration, firms' governance leads to lower conservatism. Therefore, ownership concentration negatively moderates the relationship between firms' governance and conservatism in CONACCR model.

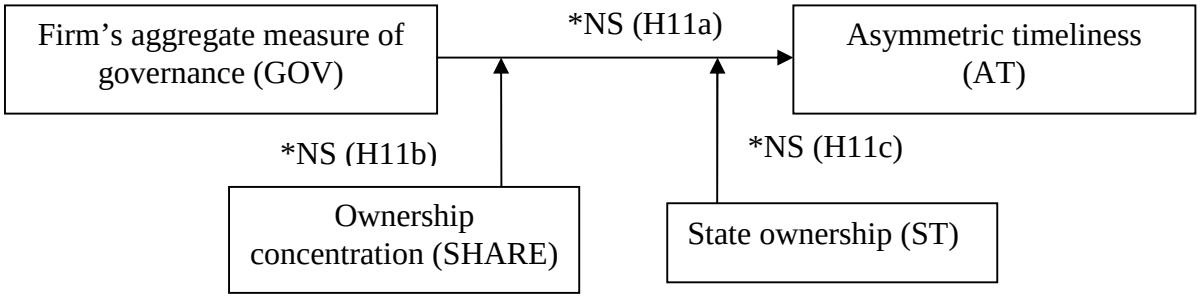
In the test of the main effect of firms' governance on firm performance, GOV is positively related to ROE and MTB but not related to PM. For the test of the moderating effect, inconsistent with the prediction, concentrated ownership does not negatively moderate the effect of GOV on performance. State ownership has no significant moderating effect based on both accounting-based measures of firm performance but it has a negative moderating effect on the effectiveness of GOV on performance based on the MTB measure. Figure 5.1 summaries the moderating effect of ownership structure.

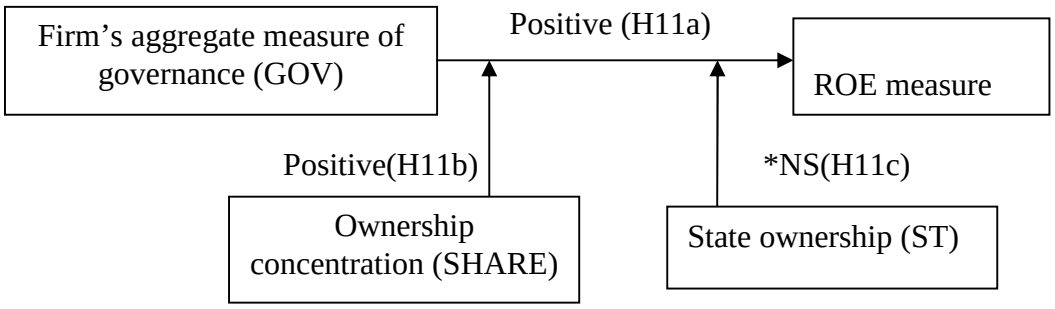
To confirm the credibility of the initial analysis, additional analyses were performed first by using binary measures for several corporate governance variables including board size, board meetings, supervisory board independence, supervisory board meetings, leverage, ownership concentration and state ownership. However, using binary measures did not produce any significant results. Since previous literature indicated that some corporate governance mechanisms have a U-shaped (or an inverted U-shaped) effect on conservatism or firm performance, this study also examines whether the above corporate governance variables have a U-shaped effect. The results show that except for board meetings, these governance variables do have a U-shaped effect on conservatism or firm performance. Companies are

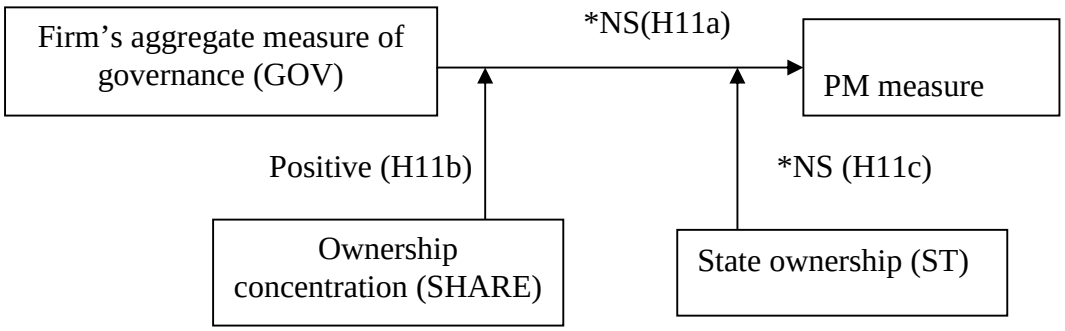
also separated into large companies and small companies to examine the effect of CEO duality on conservatism. The results show that CEO duality results in more CONACCR conservatism in small companies. This finding is consistent with the argument that small companies benefit more from CEO duality.

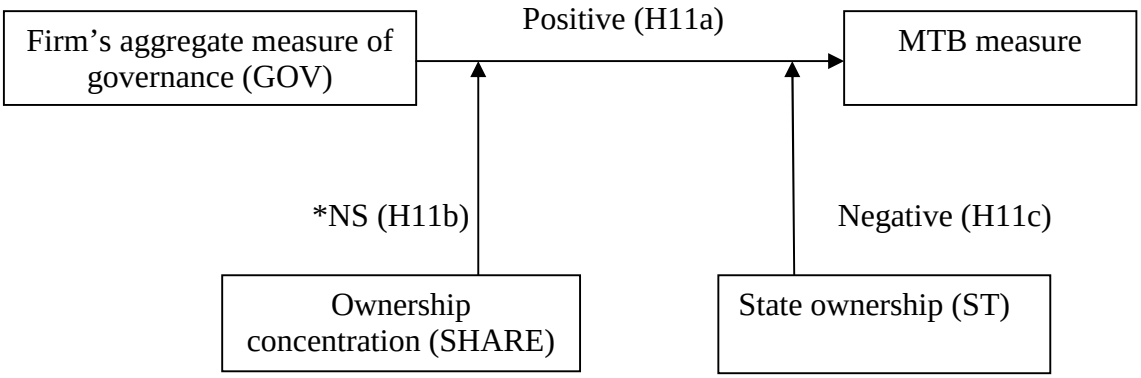
In general, more hypotheses are supported when using the asymmetric timeliness measure of conservatism, compared to the accrual-based measure. Using three different firm performance measures also produces different results. The results based on two accounting-based measures are similar while the results based on the market-based indicator (MTB) are very different. Therefore, this finding indicates that reliance on a single measure of conservatism or performance may produce incorrect conclusions.


Firm's aggregate measure of governance (GOV)
Negative (H11a)
Accrual-based conservatism (CONACCR)
Negative(H11b)
Ownership concentration (SHARE)
*NS(H11c)
State ownership (ST)


Firm's aggregate measure of governance (GOV)
*NS (H11a)
Asymmetric timeliness (AT)
*NS (H11b)
Ownership concentration (SHARE)
*NS (H11c)
State ownership (ST)


Firm's aggregate measure of governance (GOV)
Positive (H11a)
ROE measure
Positive(H11b)
Ownership concentration (SHARE)
*NS(H11c)
State ownership (ST)


Firm's aggregate measure of governance (GOV)
*NS(H11a)
PM measure
Positive (H11b)
Ownership concentration (SHARE)
*NS (H11c)
State ownership (ST)



(*NS= Not significant)

Figure 5.1 Summary of results for moderating effect of ownership concentration and state ownership

Chapter Six: Concluding remarks, implications, limitations and future research directions

6.1 Introduction

This thesis examines the effects of corporate governance on conservatism and firm performance and the moderating effect of ownership structure on the effectiveness of corporate governance. Chapter Five has presented the outcomes of the hypotheses testing and Table 6.1 and Table 6.2 summarise the initial results and the results of the U-shaped relationship test.

The chapter is organised as follows. First, it presents a summary of this thesis; second, a summary of the findings are discussed. Next, implications of this thesis for theory, policy makers, researchers and users of financial statements are discussed, followed by the limitations of the study. This chapter concludes by providing suggestions for future research.

6.2 Summary of the thesis

A number of studies have demonstrated the importance of accounting conservatism and posited that conservatism is a feature of quality financial reporting. Chapter 2 provides a detailed discussion of accounting conservatism. Although conservatism plays an important role in developed countries, its role in emerging countries is ambiguous. A study in an emerging market such as China will contribute to the literature on accounting conservatism. The introduction of the Chinese institutional context in Chapter 2 reveals that the Chinese corporate governance structure is different from those of the US, UK markets and other emerging markets. The ownership in China is concentrated in a small number of shareholders, which generates an agency conflict between controlling and minority shareholders. Moreover, compared to other emerging markets, the state, rather than families and financial institutions, is often the major shareholder in Chinese companies. This provides an opportunity to

examine the extent of conservatism in a unique environment, particularly after China has undergone major corporate governance reforms after 2005.

Previous studies showed that conservatism is important for contracting efficiency, suggesting a positive relationship between corporate governance and conservatism. A review of literature in Chapter 2 shows that ownership structure, board of directors and supervisory board are important internal mechanisms in China in relation to conservatism and firm performance. The findings of some studies were consistent with agency theory in that strong governance attributes improved quality of financial statements and firm performance, while others found contradictory results. The signs and significances of the corporate governance variables change depending what measure of conservatism and what measure of performance are used. Based on the previous studies, twenty two hypotheses are developed in Chapter 3.

Chapter 4 presents the procedures used to test the hypotheses developed in Chapter 3. Archival data are employed in this thesis because they represent reliable data for this type of research. Using accrual-based conservatism (CONACCR) and Basu's (1997) asymmetric timeliness (AT) measures of conservatism, panel data methodology is adopted to evaluate the effect of corporate governance on conservatism. The sample consists of 969 Chinese listed companies and focuses on the period from 2007 to 2010 after new accounting standards on accounting conservatism were issued in 2006.

Empirical results are reported in Chapter 5 and the summary of results is provided in the following section of this chapter. Overall, some characteristics of the two boards significantly affect the quality of financial reporting and firm performance; and asymmetric timeliness conservatism is shown to have benefits for the performance of Chinese companies. However, state ownership is shown to have a negative moderating effect on the relationship between firms' governance and AT conservatism and also negatively moderates the effectiveness of firms' governance on the MTB measure of performance. This thesis contributes to the literature on conservatism by exploring the relationship between corporate governance, conservatism and firm performance in a new setting.

In addition to the direct effect, this thesis also examines the U-shaped effect of corporate governance mechanisms on conservatism and firm performance. Some researchers have tested the U-shaped effect of ownership concentration and state ownership for Chinese listed companies. However, to our best knowledge, no study has tested the U-shaped effect of other corporate governance mechanisms (such as board size) in the Chinese context. Consistent with previous studies, this thesis finds that ownership concentration and state ownership have U-shaped (or inverted U-shaped) influence on the effectiveness of firms' governance on conservatism and firm performance. In addition, this thesis also finds that board size, supervisory board independence and frequency of supervisory board meetings have U-shaped (or inverted U-shaped) effect on conservatism or firm performance.

6.3 Summary of findings

As a transitional country, China has experienced great changes in its corporate governance practices. During the transformation process, a number of unique characteristics arose in Chinese corporate governance, such as intervention by the government, controlling shareholders, and weak protection of minority shareholders. Due to the influence of these factors, the effectiveness of recommended corporate governance practices on financial reporting quality and firm performance may be impeded. This section provides a summary of the primary findings of this thesis as follows.

1. This thesis finds that as predicted, board independence is positively related to conservatism as measured by asymmetric timeliness (AT) and firm performance as measured by market to book ratio (MTB). However, board independence is not related to accrual-based conservatism (CONACCR) and firm performance based on return on equity (ROE) and profit margin (PM). Asymmetric timeliness and market are market-based measures while CONACCR, ROE and PM are accounting-based measures. Therefore, board independence is shown to be positively associated with market-based measures of conservatism and firm performance. According to Dalton and Dalton (2005), accounting based measures are subject to managerial manipulation while market based measures are sometimes beyond managers' interference and thus cannot be manipulated.

This may explain why the presence of independent directors on the board is positively related to market based measures. Based on the AT model, this thesis finds that larger boards lead to higher levels of conservatism. However, larger boards are more costly and result in lower firm performance based on both ROE and PM measures. The frequency of board meetings has no effect on the employment of conservatism, but has a positive effect on firm performance. This may be because in the limited time at meetings, directors spend most time on the discussion of firm performance. Although the separation of CEO and chairman roles is recommended by the China Securities Regulatory Commission (CSRC), this thesis does not find a favourable effect of the separation on conservatism and firm performance as measured by ROE and PM. However, based on MTB measure of firm performance, the separation of the two roles is found to be beneficial for firm performance. Consistent with expectations, top management turnover is positively related to CONACCR and negatively related to firm performance based on two accounting-based measures. This finding supports the argument that new management would prefer to adopt conservative accounting policy in the year of management change and the argument that low firm performance would accompany top management turnover.

2. This thesis finds that supervisory board in Chinese listed companies is still not effective in the sample years. Independence of supervisory board is not associated with any measure of conservatism and firm performance, indicating that independent supervisors are incapable of effectively performing their expected function. However, including supervisors with professional knowledge or relevant work experience is shown to improve effectiveness of the supervisory board since the proportion of these professional supervisors is positively associated with both measures of conservatism and firm performance as measured by ROE and MTB. Therefore, Chinese listed companies should pay more attention to the qualifications of supervisors.

3. Results of this thesis support the benefit of conservatism on firm performance only when asymmetric timeliness is used to measure conservatism and PM is used to measure firm performance. This finding indicates that the relationship between conservatism and firm performance is sensitive to the measures of conservatism and performance.

4. The descriptive statistics show that a majority of Chinese listed companies are controlled by the largest shareholders. This result indicates that ownership of Chinese listed companies is still concentrated. The multivariate analyses results demonstrate that state ownership negatively moderates the relationship between GOV and AT conservatism as expected. Although the Chinese authorities have issued corporate governance reforms to implement gradual privatisation in state-owned enterprises (SOEs), a majority of Chinese companies in this sample are still controlled by the state. The multivariate analyses results show that state ownership does have moderating effect on the effectiveness of firms' governance on conservatism.

5. In terms of the tests for U-shaped relationship, the results show that board size has a U-shaped effect on both measures of conservatism and supervisory board independence has a U-shaped effect on firm performance as measured by PM. In the test of U-shaped relationship between supervisory board meetings (SBM) and firm performance, the results show that a U-shaped relationship exists between SBM and ROE while an inverted U-shaped relationship exist between SMB and MTB. Moreover, the results indicate that ownership concentration has an inverted U-shaped moderating effect on the relationship between GOV and firm performance based on the ROE measure while state ownership has a U-shaped moderating effect when firm performance is measured by PM. This thesis also finds an inverted U-shaped moderating effect of state ownership on the effectiveness of GOV on CONACCR conservatism.

Table 6.1 summarises the initial results, and Table 6.2, the results of the U-shaped relationship tests as follows.

Table 6.1 Summary of hypotheses testing (initial analysis)

Panel A: Hypotheses on board of directors

		Pred.	Results (Conservatism)		Results (Firm performance)		
	Hypotheses		CONACCR	AT	ROE	PM	MTB
H1a	A higher proportion of independent directors (BID) leads to more accounting conservatism.	+	No	Yes			
H1b	A higher proportion of independent directors (BID) on the board leads to better firm performance.	+			No	No	Yes
H2a	Firms with smaller boards (BS) adopt more conservatism.	-	No	No			
H2b	Firms with smaller boards (BS) have better firm performance.	-			Yes	Yes	No
H3a	More frequent boards meetings (BM) increase the employment of conservatism.	+	No	No			
H3b	More frequent board meetings (BM) increase firm performance.	+			Yes	Yes	No
H4a	The existence of CEO duality leads to less accounting conservatism.	-	No	No			
H4b	The existence of CEO duality leads to poorer firm performance.	-			No	No	Yes
H5a	Top management turnover leads to more conservatism in the first year of new management's service.	+	Yes	No			
H5b	Top management turnover (TURN) is negatively related to performance in companies with lower industry median performance.	-			Yes	Yes	No

Panel B: Hypotheses on supervisory board

		Pred.	Results (Conservatism)		Results (Firm performance)		
	Hypotheses		CONACCR	AT	ROE	PM	MTB
H6a	A higher proportion of independent supervisors (SBID) results in more accounting conservatism.	+	No	No			
H6b	A higher proportion of independent supervisors (SBID) results in better firm performance.	+			No	No	No
H7a	Firms with smaller supervisory board (SBS) employ more conservatism.	-	No	Yes			
H7b	Firms with smaller supervisory board (SBS) have better firm performance.	-			No	Yes	No
H8a	More frequent supervisory board meetings (SBS) lead to more conservatism.	+	No	No			
H8b	More frequent supervisory board meetings (SBS) results in better firm performance.	+			No	No	No
H9a	More supervisors with professional knowledge or work experience (SBQ) results in more conservatism.	+	Yes	Yes			
H9b	More supervisors with professional knowledge or work experience (SBQ) results in better firm performance.	+			Yes	No	Yes

Panel C: Hypotheses on the effect of conservatism on firm performance and moderating effect of ownership structure

		Pred.	Results (Conservatism)		Results (Firm performance)		
	Hypotheses		CONACCR	AT	ROE	PM	MTB
H10	Firms that employ more conservatism have better firm performance than firms that employ less conservatism.	+	No	Yes*			
H11a	Companies with stronger governance adopt more conservatism and have better firm performance.	+	No	No	Yes	No	Yes
H11b	Ownership concentration negatively moderates the positive effect of corporate governance mechanism on conservatism and firm performance.	-	No	No	No	No	No
H11c	State ownership negatively moderates the positive effect of corporate governance mechanisms on conservatism and firm performance.	-	No	Yes	No	No	Yes

*****Only supported when PM is used to measure performance

Table 6.2 Summary of hypotheses testing (U-shaped relationship tests)

	Results (Conservatism)		Results (Firm performance)		
Tested variables	CONACCR	AT	ROE	PM	MTB
Board size (BS) and conservatism	U-shape	U-shape			
Board meetings (BM) and conservatism	NS	NS			
Supervisory board independence (SBID) and conservatism	NS	NS			
Supervisory board independence and firm performance			NS	U-shape	NS
Frequent of supervisory board meetings (SBM) and conservatism	NS	NS			
Frequency of supervisory board meetings (SBM) and firm performance			U-shape	NS	Inverted U-shape
Moderating effect of ownership concentration on firms' governance (SHARE*GOV) and firm performance			Inverted U-shape	NS	NS
Moderating effect of state concentration on firms' governance (ST*GOV) and conservatism	Inverted U-shape	NS	NS	U-shape	-

NS= Not significant

6.4 Implications of this thesis

6.4.1 Implications for theory

This thesis examines corporate governance in a transitional country where the state controls a majority of listed companies. A comprehensive set of internal corporate governance mechanisms is investigated to examine their effect on conservatism and firm performance. This thesis finds that the independence of board of directors is effective in monitoring financial reporting quality when measured by asymmetric timeliness and is effective in

improving firm performance as measured by MTB. This finding supports the growing literature by documenting the importance of independent directors. Even though the institutional background of China differs from those of the US and UK, board independence remains an important component of corporate governance. The insignificant result on the effectiveness of supervisory board independence can be explained by managerial hegemony theory. According to this theory, due to management dominance over supervisory board matters, the board of supervisors can be viewed as merely rubber-stamping the decisions of the management and is not necessarily an effective monitoring mechanism. However, the U-shaped relationship between supervisory board independence and firm performance measured by PM indicates that it is beneficial for firm performance only when the proportion of independent members is high.

Although controlling shareholders have determining power over the two boards, some of the board of directors and supervisory board attributes do affect conservatism and firm performance. This indicates that some internal governance mechanisms are effective beyond the power of the dominant shareholders. Therefore, the recommendation of good governance practice by agency theory and resource dependence theory are applicable to a certain extent. Furthermore, this thesis indicates that ownership concentration and state ownership do influence the effectiveness of firms' governance on conservatism and firm performance.

After establishing the effect of corporate governance on conservatism and performance, this thesis also tests whether conservative accounting constrains opportunistic behaviours and results in better firm performance. The positive relationship between asymmetric timeliness and profit margin supports the prediction of positive accounting theory that conservatism can reduce agency conflict and thus increases firm value.

According to agency theory, managerial ownership can reduce agency conflict. However, this traditional agency theory based on the separation of management and ownership is not applicable in China due to ownership concentration. Instead, a unique agency conflict between controlling shareholders and minority shareholders exists in Chinese companies. To expropriate the interest of minority shareholders, controlling shareholders would prefer

aggressive accounting policies to management earnings. The results support the agency conflict theory since controlling shareholders influenced governance adopt less conservatism.

Although resource dependency theory does not always suggest governmental influence to be negative, many studies have found that the influence of government in financial reporting and firm performance is negative (Chen et al., 2010; Xu & Wang, 1999; Qi et al., 2000; Sun & Tong, 2003; Wang, 2003; Gunasekarage et al., 2007). The results of initial analysis in this thesis find no influence of state ownership on the effectiveness of corporate governance on conservatism. According to Mohammed et al. (2010), state related companies are supposed to drive developing economies and are important in promoting the image of the country, thus they may not employ aggressive accounting policies, which prevents the occurrence of a negative relationship with conservatism. The results also show a negative relationship between state ownership and firm performance as measured by MTB supporting the negative influence of state ownership.

In addition, the inverted U-shaped moderating effect of state ownership on the effectiveness of firms' governance on CONACCR measure of conservatism indicates that the influence of state ownership becomes negative only after it increase to a certain point. In contrast, the influence of state ownership on the effectiveness of firms' governance on firm performance is U-shaped using the PM measure of performance. This result suggests state ownership has a negative influence on the relationship between firms' governance and performance when state shareholdings are small.

In general, this thesis fills a gap in the Chinese corporate governance literature that is related to accounting conservatism. There is some research examining the relationship between corporate governance and firm performance in China but most of them used sample companies from before 2006. All listed companies in China were required to adhere to new accounting standards that reflected accounting conservatism after 2006. Therefore, this thesis builds on the previous limited research and provides some findings using more recent data.

6.4.2 Implications for policy makers and accounting practice

In terms of board attributes, this thesis finds that the requirement by CSRC of having more than one third independent directors has been effective to improve board monitoring power on financial reporting quality. Although some earlier studies found that the Code of Corporate Governance was not immediately effective after its introduction, following the western corporate governance practices of including independent directors is worthwhile for China. CSRC encouraged Chinese companies to separate CEO and chairman roles. The results show that a majority of companies followed the recommendation to separate the roles; however, the separation reduces accrual-based conservatism. This finding provides an opportunity for regulators to consider whether the recommendation is appropriate to the Chinese setting as there is seemingly no benefit on conservatism.

Although the Code of CSRC has increased the power of the supervisory board, the result of initial analysis shows that having independent supervisors and holding regular supervisory board meetings do not guarantee an improvement of quality of financial reporting and firm performance. This could be due to the supervisory board being a new concept that is still developing and the regulators should complete the recommendation to strengthen the power of the supervisory board. The U-shaped relationship between supervisory board independence and firm performance measured by PM may encourage regulators to require Chinese companies to include more independent supervisors since it improves firm performance when the proportion is high. The positive effect of professional supervisors on conservative accounting and firm performance suggests that the recommendation of CSRC on qualification of supervisors appears to be effective.

The negative moderating effect of state ownership on the effectiveness of governance on conservatism and performance measured by MTB indicates that state ownership still has a negative influence on financial statement quality and firm performance for the period examined. The test of U-shaped effect indicates that state ownership has an inverted U-shaped influence on the effectiveness of firms' governance on conservatism while its influence on the effectiveness of firms' governance on firm performance is U-shaped. This finding indicates that large proportion of state ownership influences firms' governance to

employ less conservatism, but it influences firms' governance to achieve better financial performance. The results on the U-shaped test may help policy makers to determine the optimum proportion of state ownership for Chinese companies. Policy makers may like to consider a range rather than a minimum level of the corporate governance variables.

Controlling shareholders are shown to influence governance to adopt less conservatism. This result suggests that the agency conflict between controlling and minority shareholders is still strong in Chinese companies and regulators should make efforts to control the conflict. As previous literature has indicated, weak enforcement of legal protection for minority shareholders is one of the reasons for agency conflict in emerging countries. Therefore, regulators should strengthen the enforcement of the law before implementing internal governance mechanisms that can be manipulated by dominant shareholders. The inverted U-shaped moderating effect of ownership concentration on the relationship between firms' governance and firm performance shows that low concentrated ownership is beneficial for firm performance but high concentrated ownership is harmful for performance.

The positive effect of asymmetric timeliness conservatism on profit margin confirms the benefits of conservatism on firm performance. Consequently, more emphasis on accounting conservatism, not only in requirement but enforcement, is necessary and introducing conservatism practice to the Chinese accounting framework is worthwhile as it is beneficial for companies.

In general, the findings of this thesis provide some insights for regulators, policy makers and accounting practice in China. The ineffectiveness of some internal governance mechanisms shows that more efforts should be made by regulators to improve corporate governance and quality of financial reporting.

6.4.3 Implication for researchers

The outcome of this thesis indicates that using alternative measures of conservatism and firm performance can produce different results. This may be one of the reasons that previous

studies produced mixed evidence on the effect of corporate governance. Therefore, researchers are encouraged to use alternative measures of variables to draw a correct conclusion.

Ownership concentration and state ownership are unique characteristics of Chinese listed companies. The results show that ownership concentration and state ownership have linear and U-shaped moderating effects on the effectiveness of governance on conservatism and firm performance, respectively. This outcome highlights the importance of ownership structure and researchers are encouraged to continue investigating the influences of concentrated ownership and state ownership not only in China but other developing countries. Furthermore, few studies examined the effectiveness of the supervisory board since it was considered to play an inactive and insignificant role in Chinese corporate governance. Although this study shows that independent members on supervisory board do not have significant effect on conservatism and firm performance, the professional supervisors are found to be effective in monitoring financial reporting quality and performance. Therefore, future researchers should further examine the function of the supervisory boards. This thesis also finds that some corporate governance mechanisms have U-shaped effects on conservatism and firm performance. The nonlinear effect of corporate governance should be further examined to find the turning point for the U-shaped relationships. Other methodologies could be used to explain what factors cause the effect.

The positive relationship between asymmetric timeliness and profit margin confirms the importance of conservatism practice in China. This should encourage researchers to investigate conservative accounting in emerging economies, such as China especially as developments in China has an impact on world economy.

6.4.4 Implication for users of financial statements

The users of financial statements can benefit from the results of this thesis because they can better understand how internal corporate governance mechanisms affect conservatism and firm performance. The adverse moderating effect of state ownership on the relationship between corporate governance and conservatism indicates that the state may influence

governance to adopt more aggressive accounting policies. Therefore, the users should apply caution when using the information from financial statements of companies with state ownership. They cannot simply rely on the reported financial statement but also try to gain additional information to assist them in making correct decisions. In their investment decision they should pay attention to the ownership structure in addition to financial statement and other information.

6.5 Limitations of this thesis

Although this thesis has several strengths, as with any research, it is subject to a number of limitations as listed below:

1. There are limitations relating to measurement issues. The choice of proxies for conservatism and firm performance are discussed in the measurement section. However, there is no universal agreement on using proxies. This thesis uses two different measures of conservatism and three measures of firm performance. As reported in Chapter Five, inconsistent results are produced based on different measures. For corporate governance variables, some studies used different measures of ownership concentration. For instance, percentage of shareholdings held by top five or ten shareholders is used to measure ownership concentration (Wei, 2007; Shan & McIver, 2011; Hwang et al., 2010). In addition, since most companies in the sample years have greater than one-third independent directors, the proportion of independent directors may not have enough variability to be an important factor. Therefore, it is recommended that future research uses alternative measures in order to find a 'robust' measure for the variables examined.

   Aggregate measures of corporate governance also have some limitations. First, governance indices, which include a number of attributes of governance to identify the quality of firms' governance, may have greater possibility of measurement error in computing than single governance attribute. Second, following previous academic governance indices, the governance features employed in this study are equally

weighted (Bhagat et al., 2008). However, the weights of these governance features may not always be equal and differ across firms. Thus, incorrect inferences may be drawn regarding the effectiveness of corporate governance when the weight is not equal in reality.

2. There is an issue of generalisation. The sample in this research is limited to listed companies. Companies that are not listed in China's two stock exchanges are not included because their annual reports are difficult to collect. Moreover, all financial companies are excluded in the sample of this thesis because these companies are regulated by different accounting practices. Thus, the findings from this thesis cannot be generalised to unlisted companies and listed financial companies.

3. Data used in this thesis are collected from annual reports and Datastream, and thus the qualitative nature of board of directors and supervisory board is not examined. For instance, it is possible for the boards to hold high number of meetings, but the meetings may lack substance. Hence, further research could look into the contents and procedures of meetings to determine the intrinsic nature of board activities.

   As Peng (2004) stated, reliance on archival data leads to less information on the internal working of the board. Some researchers argued that probably no directors were independent in Chinese listed companies although they were titled as "independent directors" in annual reports. Therefore, more concrete information relating to the behaviour of independent directors may lead to better understanding. For instance, to investigate whether outside directors fulfilled functions commonly recognised, Young, Ahlstrom, Bruton and Chan (2001) conducted interviews with board members.

   Moreover, some concerns may arise on annual reports disclosures. Some companies provide very detail information relating to the board members in the annual reports while the others may provide a simple description. Therefore, two supervisors with same qualification and work experience may be described differently in annual reports. This is a limitation of achieving information merely from the annual reports.

4. Another limitation is concerned with the use of industry median profitability as the focal company's performance target. This limitation was also acknowledged by Shen and Lin (2009). Although this treatment is widely employed by research on the behaviour theory of organisational search, future researchers are encouraged to survey companies' top management directly relating to their performance target.

5. This thesis examines two important internal corporate governance mechanisms, namely board of directors and supervisory board. External corporate governance mechanisms, such as monitoring by blockholders and analysts, external auditors and regulation, are not examined in this thesis.

6.6 Future research

Building on the limitations discussed in the previous section, future research can explore the following issues further.

1. This thesis examines the moderating effect of state ownership on the effectiveness of firms' governance on conservatism and firm performance. However, as Lin (2011) indicated, state ownership is a broad concept in Chinese corporate governance. It can be categorised into state owned enterprises (SOEs) controlled by state asset management bureaus, SOEs affiliated to the central government and those affiliated to the local government. Since different types of state ownership have different objectives and motivations, future research can test the moderating effect of different types of state ownership.

2. The results of this thesis show that some strong board attributes do not lead to higher level of conservatism and better firm performance. This finding is contrary with most of previous studies and the expectation that strong board attributes can improve financial reporting quality and performance. Since this thesis is limited to the quantitative aspect of the two boards, further work can be done through in-depth qualitative analysis on

characteristics of the two boards. For instance, interviews with independent supervisors can provide a deeper understanding of their influence on financial reporting and performance. The qualitative research based on in-depth interviews and direct observations can increase both the validity of operationalisation and reliability of measurement (Heracleous, 2001). For example, instead of employing a quantitative method as attempted in this thesis, Dahya et al. (2002) used qualitative research based on interviews with directors, members of supervisory boards and top management of 16 Chinese listed companies to examine the usefulness of supervisory boards. In addition, some previous literature (Demb & Neubauer, 1992; Bowen, 1994) determined what directors do by observing directors, that is, the research involved field work. Some researchers have called for such field studies, however, in fact, such studies are so scarce (Heracleous, 2001). Therefore, future researchers are encouraged to examine corporate governance mechanisms based on qualitative research.

3. The role of professional supervisors is worthy of further investigation. The Code issued by CSRC has given particular attention to the supervisory board qualification. The results of this thesis show that professional supervisors indeed have strong positive effects on conservatism and firm performance. An extension of the study to Germany and Japan which also employ two-tier board systems may offer a better understanding on the role of professional supervisors.

4. As discussed in section 6.3.11, the aggregate measure of corporate governance is based on two assumptions. The two assumptions may not be supported in this sample, resulting in imperfect measure of corporate governance. Future researchers may try other methods to measure corporate governance.

5. The unique agency conflict in emerging economies is worthwhile to explore. Agency conflict in these economies is between controlling and minority shareholders rather than the traditional agency conflict between principal and agent. Liew (2007) indicated that the unique agency conflict contributed to the 1997 Asian financial crisis. After the crisis, some emerging countries have issued corporate governance reforms to reduce the

problem. Future research could investigate agency conflict between controlling and minority shareholders and examine whether the corporate governance reforms are effective in eliminating the conflict.

6. CSMAR and WIND may be better databases to use for China research. Due to cost constraints, this thesis used DataStream to collect data. For future work, CSMAR and WIND may be better databases to use.

7. The published financial statements are the result of both the managers' and the auditors' opinions and judgements. This raises the possibility of conservatism being (partly) influenced by the auditor. Several studies have reported quality differences across auditors in China. One extension of the research could be to examine the role of the auditors in requiring firms to using conservative accounting. Furthermore, external governance, such as institutional stock ownership, regulatory oversight and auditors could be examined in future.

Overall, the findings of this thesis provide initial evidence on the relationship between corporate governance, conservatism, and firm performance in China. With the rapid development of the Chinese economy and political system, it is believed that there are increasing research opportunities to test the influence of corporate governance on the quality of financial reporting and firm performance.

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Appendices

Appendix A VIF test on independent variables

Variable	VIF
Share	1.52
ST	1.61
BID	1.18
BS	1.37
BM	1.18
CEODUO	1.04
TURN	1.08
SBID	1.04
SBS	1.17
SBM	1.12
SBQ	1.02
TA	1.36
ROA	1.21
SGROW	1.13
LEV	1.11

Appendix B Results of asymmetric timeliness

		(a) One-year estimate		(b) Three-year estimate	
	Predicted signs	Coefficients	t-statistic	Coefficients	t-statistic
Constant		0.132	**1.76***	0.036	**2.64*****
R		-0.377	**-13.84*****	-0.071	-1.62
D		-0.005	-0.15	0.019	0.95
RD		-0.345	-1.63	-0.039	-0.45
BID		-0.036	**-3.23*****	0.039	**1.75***
BID*R	-	0.049	0.69	-0.012	-0.93
BID*D		0.131	1.58	-0.053	**-2.12****
BID*RD	+	0.388	**2.55****	0.116	**2.58****
BS		0.019	**7.90*****	0.005	**1.73***
BS*R	+	0.018	1.32	0.009	**2.09****
BS*D		-0.004	-0.32	0.009	1.57
BS*RD	-	0.011	0.44	0.043	**2.86*****
BM		-0.001	-1.66	0.000	0.13
BM*R	-	0.000	0.46	-0.000	-1.19
BM*D		0.001	0.83	0.001	**10.81*****
BM*RD	+	0.002	**1.90***	-0.001	-0.88
CEODUO		0.001	0.23	-0.000	-0.11
CEODUO*R	+	0.000	0.05	-0.004	**-6.22*****
CEODUO*D		-0.008	**-8.14*****	0.000	0.26
CEODUO*RD	-	-0.049	**-5.08*****	-0.007	-0.96
TURN		0.000	0.14	0.003	1.62
TURN*R	+	0	omitted	-0.003	-1.14
TURN*D		-0.001	-0.29	-0.012	**-3.56*****
TURN*RD	-	-0.021	**-1.86***	-0.023	**-3.90*****
SBID		0.005	**3.23****	-0.018	**-4.52*****
SBID*R	-	-0.016	**-1.99***	0.010	**4.57*****
SBID*D		-0.009	**-2.55****	0.015	**3.07*****
SBID*RD	+	0.036	1.40	0.016	1.39
SBS		0.022	**6.19*****	0.001	0.47
SBS*R	+	-0.011	-1.33	-0.001	-0.89
SBS*D		-0.007	**-2.68*****	-0.007	**-4.15*****
SBS*RD	-	-0.010	-0.55	-0.033	**-17.51*****
SBM		-0.003	**-4.70*****	0.000	**2.98*****

SBM*R	-	0.003	**4.15*** **	-0.001	**-4.01*** **
SBM*D		0.001	1.14	-0.001	-1.63
SBM*RD	+	-0.000	-0.08	-0.001	-0.17
SBQ		-0.013	**-2.69*** **	-0.002	-1.21
SBQ*R	-	0.022	**2.52** **	-0.006	**-4.39*** **
SBQ*D		0.005	0.74	0.008	**1.88***
SBQ*RD	+	-0.038	**-2.81*** **	0.026	**1.98** **
TA		-0.006	**-1.74***	-0.002	**-2.03** **
TA*R	+	0.016	**5.47*** **	0.004	**2.36** **
TA*D		-0.002	**-1.67***	-0.001	-1.11
TA*RD	-	0.008	1.10	-0.002	-0.49
ROA		0.287	**7.71*** **	0.113	**4.69*** **
ROA*R	-	0.283	**7.23*** **	0.007	0.62
ROA*D		0.056	1.58	-0.036	-1.56
ROA*RD	+	-0.081	-0.62	-0.124	**-1.89***
MTB		-0.004	**-10.03*** **	-0.001	**-4.89*** **
MTB*R	+	-0.001	**-2.35** **	-0.002	**-8.00*** **
MTB*D		-0.001	**-3.41*** **	-0.000	**-2.05** **
MTB*RD	-	0.001	1.06	-0.002	**-3.60*** **
LEV		-0.003	-0.75	-0.015	**-1.95***
LEV*R	-	0.023	1.18	0.015	**2.77*** **
LEV*D		0.027	**1.89***	0.007	1.42
LEV*RD	+	0.046	1.15	0.029	1.07
F-value			**4.91*** **		**10.01*** **
R^2 within			0.4071		0.2909
N			3876		3876

*******p<0.01; ******p<0.05; *****p<0.1
Omitted: TURN*R is omitted by STATA due to collinearity

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, SHARE= Largest shareholdings, ST= State ownership, BID= Board independence, BDGOV= Dummy equals 1 if government officers are independent directors, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

Appendix C Relation between AT and firm performance

Panel A: Relation between AT and ROE measure

Variables	Coefficients	t-statistics
Constant	0.088	**2.42****
R	-0.093	**-2.98*****
D	0.025	0.73
RD	-0.018	-0.18
ROE	0.052	**3.47*****
ROE*R	0.005	1.14
ROE*D	-0.005	-0.74
ROE*RD	-0.029	-0.49
TA	-0.003	**-1.71***
TA*R	0.005	**3.16*****
TA*D	-0.001	-0.89
TA*RD	0.001	0.19
LEV	-0.021	**-1.96***
LEV*R	0.023	**3.52*****
LEV*D	0.012	**2.56****
LEV*RD	-0.005	-0.31
F-value		**22.18*****
R^2 within		0.2111
N		3876

***p<0.01; **p<0.05; *p<0.10

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, ROE= Return on equity, TA= Total assets, LEV= Leverage.

Panel B: Relation between AT and PM measure

Variables	Coefficients	t-statistics
Constant	0.090	**2.30****
R	-0.100	**-2.80*****
D	0.008	0.40
RD	-0.048	-0.56
PM	0.054	**3.52*****
PM*R	-0.018	**-1.98****
PM*D	-0.010	-1.29

PM*RD	0.012	0.38
TA	-0.003	-1.64
TA*R	0.006	**3.02*** **
TA*D	-0.000	-0.49
TA*RD	0.002	0.63
LEV	-0.019	**-1.84***
LEV*R	0.024	**3.05*** **
LEV*D	0.008	**2.60** **
LEV*RD	-0.009	-0.49
F-value		**22.71*** **
R^2 within		0.1891
N		3876

*** p<0.01; ** p<0.05; * p<0.10

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, PM= Profit margin, TA= Total assets, LEV= Leverage.

Appendix D Results of AT: board size using binary variables

	Predicted signs	Coefficients	t-statistic
Constant		0.055	**3.97*** **
R		-0.059	-1.60
D		0.036	**1.85***
RD		0.063	0.79
BID		0.022	0.83
BID*R	-	-0.007	-0.34
BID*D		-0.055	**-1.90***
BID*RD	+	0.000	0.00
DUMMY-BS		-0.002	**-1.78***
DUMMY-BS*R	+	0.002	1.22
DUMMY-BS*D		0.004	1.64
DUMMY-BS*RD	-	0.003	1.21
BM		0.000	0.24
BM*R	-	-0.000	-1.22
BM*D		0.001	**6.83*** **
BM*RD	+	-0.001	-1.27
CEODUO		-0.000	-0.15
CEODUO*R	+	-0.004	**-5.48*** **
CEODUO*D		0.001	1.35
CEODUO*RD	-	-0.002	-0.33
TURN		0.003	1.55
TURN*R	+	-0.003	-1.10
TURN*D		-0.012	**-3.32*** **
TURN*RD	-	-0.023	**-3.89*** **
SBID		-0.017	**-4.63*** **
SBID*R	-	0.010	**4.16*** **
SBID*D		0.017	**2.88*** **
SBID*RD	+	0.023	**1.71***
SBS		0.001	0.85
SBS*R	+	0.000	0.51
SBS*D		-0.006	**-3.02** **
SBS*RD	-	-0.023	**-6.07*** **
SBM		0.000	**2.52*** **
SBM*R	-	-0.001	**-3.77*** **

SBM*D		-0.001	**-1.83***
SBM*RD	+	-0.001	-0.26
SBQ		-0.002	-1.05
SBQ*R	-	-0.007	**-4.21*****
SBQ*D		0.007	**1.81***
SBQ*RD	+	0.023	**1.88***
TA		-0.002	**-2.15****
TA*R	+	0.005	**2.39****
TA*D		-0.001	-1.34
TA*RD	-	-0.001	-0.29
ROA		0.113	**4.61*****
ROA*R	-	0.005	0.47
ROA*D		-0.036	-1.40
ROA*RD	+	-0.131	**-1.76***
MTB		-0.001	**-4.70*****
MTB*R	+	-0.002	**-7.95*****
MTB*D		-0.000	**-2.29****
MTB*RD	-	-0.002	**-5.01****
LEV		-0.015	**-1.85***
LEV*R	-	0.016	**2.64*****
LEV*D		0.007	1.34
LEV*RD	+	0.026	1.10
F-value			**2.54*****
R^2 within			0.2891
N			3876

***p<0.01; **p<0.05; *p<0.1

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

Appendix E Results of AT: board meetings using binary variables

	Predicted signs	Coefficients	t-statistic
Constant		0.034	**2.46****
R		-0.072	-1.60
D		0.024	1.22
RD		-0.031	-0.37
BID		0.037	**1.72***
BID*R	-	-0.011	-0.83
BID*D		-0.052	**-2.04****
BID*RD	+	0.125	**2.95*****
BS		0.004	1.59
BS*R	+	0.009	**2.21****
BS*D		0.009	1.59
BS*RD	-	0.043	**3.11*****
DUMMY-BM		-0.000	-0.23
DUMMY-BM*R	-	-0.001	-0.93
DUMMY-BM*D		0.005	**3.77*****
DUMMY-BM*RD	+	-0.000	-0.14
CEODUO		-0.000	-0.14
CEODUO*R	+	-0.004	**-5.71*****
CEODUO*D		0.000	0.57
CEODUO*RD	-	-0.006	-0.83
TURN		0.003	1.58
TURN*R	+	-0.003	-1.14
TURN*D		-0.013	**-3.49*****
TURN*RD	-	-0.025	**-4.13*****
SBID		-0.017	**-4.46*****
SBID*R	-	0.010	**4.84*****
SBID*D		0.015	**3.14*****
SBID*RD	+	0.014	1.34
SBS		0.001	0.50
SBS*R	+	-0.001	-0.91
SBS*D		-0.008	**-4.17*****
SBS*RD	-	-0.033	**-15.25*****
SBM		0.000	**3.59*****
SBM*R	-	-0.001	**-3.84*****

SBM*D		-0.001	**-2.28****
SBM*RD	+	-0.002	-0.41
SBQ		-0.002	-1.21
SBQ*R	-	-0.006	**-4.29*****
SBQ*D		0.008	**1.94***
SBQ*RD	+	0.025	**1.95***
TA		-0.001	**-1.84***
TA*R	+	0.004	**2.32****
TA*D		-0.001	-1.13
TA*RD	-	-0.002	-0.60
ROA		0.113	**4.63*****
ROA*R	-	0.007	0.62
ROA*D		-0.036	-1.59
ROA*RD	+	-0.129	**-1.98****
MTB		-0.001	**-4.93*****
MTB*R	+	-0.002	**-8.06*****
MTB*D		-0.000	**-2.39****
MTB*RD	-	-0.003	**-3.91****
LEV		-0.015	**-2.05****
LEV*R	-	0.016	**2.90*****
LEV*D		0.009	1.53
LEV*RD	+	0.034	1.26
F-value			**16.09*****
R^2 within			0.2906
N			3876

***p<0.01; **p<0.05; *p<0.1

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, SHARE= Largest shareholdings, ST= State ownership, BID= Board independence, BDGOV= Dummy equals 1 if government officers are independent directors, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

Appendix F Results of asymmetric timeliness: SBID using binary variables

	Predicted signs	Coefficients	t-statistic
Constant		0.030	**2.47****
R		-0.066	**-1.55***
D		0.025	1.18
RD		-0.038	-0.44
BID		0.038	**1.74***
BID*R	-	-0.012	-0.91
BID*D		-0.053	**-2.00****
BID*RD	+	0.121	**3.12*****
BS		0.005	**1.75***
BS*R	+	0.008	**2.09****
BS*D		0.010	1.55
BS*RD	-	0.046	**2.84*****
BM		0.000	0.07
BM*R	-	-0.000	-1.19
BM*D		0.001	**11.97*****
BM*RD	+	-0.000	-0.49
CEODUO		-0.000	-0.01
CEODUO*R	+	-0.004	**-6.30*****
CEODUO*D		0.000	0.30
CEODUO*RD	-	-0.006	-0.99
TURN		0.003	1.54
TURN*R	+	-0.003	-1.07
TURN*D		-0.012	**-3.61*****
TURN*RD	-	-0.024	**-4.29*****
DUMMY-SBID		-0.005	**-4.62*****
DUMMY-SBID*R	-	0.002	**2.04****
DUMMY-SBID*D		0.002	**2.62*****
DUMMY-SBID*RD	+	0.002	0.27
SBS		0.001	1.04
SBS*R	+	-0.001	-1.38
SBS*D		-0.008	**-4.08*****
SBS*RD	-	-0.035	**-8.61*****
SBM		0.000	**3.38*****
SBM*R	-	-0.001	**-4.09*****

SBM*D		-0.001	-1.65
SBM*RD	+	-0.001	-0.14
SBQ		-0.002	-1.06
SBQ*R	-	-0.006	**-4.24*** **
SBQ*D		0.008	**1.98** **
SBQ*RD	+	0.028	**2.03** **
TA		-0.001	**-2.04** **
TA*R	+	0.004	**2.32** **
TA*D		-0.001	-1.45
TA*RD	-	-0.002	-0.64
ROA		0.113	**4.76*** **
ROA*R	-	0.006	0.57
ROA*D		-0.036	-1.58
ROA*RD	+	-0.125	**-1.96***
MTB		-0.001	**-5.14*** **
MTB*R	+	-0.002	**-7.74*** **
MTB*D		-0.000	**-2.14** **
MTB*RD	-	-0.002	**-4.64*** **
LEV		-0.015	**-1.93***
LEV*R	-	0.016	**2.69*** **
LEV*D		0.008	1.50
LEV*RD	+	0.029	1.06
F-value			**12.42*** **
R^2 within			0.2913
N			3876

***p<0.01; **p<0.05; *p<0.1

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, SHARE= Largest shareholdings, ST= State ownership, BID= Board independence, BDGOV= Dummy equals 1 if government officers are independent directors, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

Appendix G Results of asymmetric timeliness: SBM using binary variables

	Predicted signs	Coefficients	t-statistic
Constant		0.036	**2.62*** **
R		-0.074	**-1.69***
D		0.012	0.56
RD		-0.065	-0.69
BID		0.038	**1.77***
BID*R	-	-0.012	-0.94
BID*D		-0.055	**-2.29****
BID*RD	+	0.107	**2.44****
BS		0.005	**1.72***
BS*R	+	0.008	**2.03****
BS*D		0.010	1.61
BS*RD	-	0.049	**2.91*** **
BM		0.000	0.32
BM*R	-	-0.000	-1.33
BM*D		0.001	**5.34*** **
BM*RD	+	-0.000	-0.52
CEODUO		0.000	0.05
CEODUO*R	+	-0.004	**-6.52*** **
CEODUO*D		0.001	0.98
CEODUO*RD	-	-0.004	-0.70
TURN		0.003	1.56
TURN*R	+	-0.003	-1.10
TURN*D		-0.012	**-3.31*** **
TURN**RD**	-	-0.022	**-3.28*** **
SBID		-0.018	**-4.36*** **
SBID*R	-	0.010	**4.86*** **
SBID*D		0.015	**2.99*** **
SBID*RD	+	0.017	1.44
SBS		0.000	0.39
SBS*R	+	-0.000	-0.40
SBS*D		-0.008	**-4.38*** **
SBS*RD	-	-0.034	**-14.18*** **
DUMMY-SBM		0.000	0.58
DUMMY-SBM*R	-	-0.002	**-5.40*** **

DUMMY-SBM*D		-0.002	**-1.94***
DUMMY-SBM*RD	+	-0.011	-1.32
SBQ		-0.002	-1.19
SBQ*R	-	-0.006	**-4.72****
SBQ*D		0.008	**1.81***
SBQ*RD	+	0.025	**2.01****
TA		-0.002	**-2.12****
TA*R	+	0.004	**2.40****
TA*D		-0.001	-0.92
TA*RD	-	-0.002	-0.38
ROA		0.113	**4.69****
ROA*R	-	0.010	0.63
ROA*D		-0.037	**-1.66***
ROA*RD	+	-0.128	**-1.97****
MTB		-0.001	**-4.86****
MTB*R	+	-0.002	**-8.00****
MTB*D		-0.000	-1.62
MTB*RD	-	-0.002	**-3.27****
LEV		-0.015	**-1.91***
LEV*R	-	0.016	**2.66****
LEV*D		0.008	**1.71***
LEV*RD	+	0.031	1.35
F-value			**8.51****
R^2 within			0.2913
N			3876

*******p<0.01; ******p<0.05; *****p<0.1

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.

Appendix H Results of asymmetric timeliness: LEV using binary variables

	Predicted signs	Coefficients	t-statistic
Constant		0.048	**2.84*** **
R		-0.075	**-1.68***
D		0.017	0.72
RD		-0.065	-0.72
BID		0.039	**1.70***
BID*R	-	-0.012	-0.87
BID*D		-0.067	**-1.89***
BID*RD	+	0.046	0.84
BS		0.005	**2.01***
BS*R	+	0.009	**2.01****
BS*D		0.009	1.45
BS*RD	-	0.038	**2.74*** **
BM		0.000	0.11
BM*R	-	-0.000	-1.13
BM*D		0.001	**7.07*** **
BM*RD	+	-0.001	**-1.84***
CEODUO		-0.000	-0.30
CEODUO*R	+	-0.004	**-7.32*** **
CEODUO*D		0.001	1.20
CEODUO*RD	-	-0.003	-0.38
TURN		0.003	1.59
TURN*R	+	-0.003	-1.14
TURN*D		-0.012	**-3.72*** **
TURN*RD	-	-0.024	**-5.35*** **
SBID		-0.018	**-4.31*** **
SBID*R	-	0.010	**4.62*** **
SBID*D		0.015	**3.21*** **
SBID*RD	+	**0.013**	**2.47****
SBS		0.001	0.73
SBS*R	+	-0.001	-1.00
SBS*D		-0.007	**-4.20*** **
SBS*RD	-	-0.033	**-13.30*** **
SBM		0.000	**2.76*** **
SBM*R	-	-0.001	**-3.95*** **

SBM*D		-0.001	**-1.88****
SBM*RD	+	-0.000	-0.08
SBQ		-0.002	-1.47
SBQ*R	-	-0.006	**-5.20*****
SBQ*D		0.008	**1.80***
SBQ*RD	+	0.027	**1.99****
TA		-0.002	**-2.51****
TA*R	+	0.005	**2.53****
TA*D		-0.000	-0.23
TA*RD	-	0.001	0.55
ROA		0.116	**4.59*****
ROA*R	-	0.003	0.25
ROA*D		-0.037	**-1.72***
ROA*RD	+	-0.146	-1.64
MTB		-0.001	**-4.48*****
MTB*R	+	-0.002	**-8.36*****
MTB*D		-0.000	**-2.56****
MTB*RD	-	-0.001	**-2.73****
LEV		0.001	0.31
LEV*R	-	0.002	0.79
DUMMY-LEV*D		-0.004	-0.83
DUMMY-LEV*RD	+	-0.007	-0.34
F-value			**8.18*****
R^2 within			0.2898
N			3876

***p<0.01; **p<0.05; *p<0.1

R= Annual share return, D= Dummy 1 if R is negative; 0 otherwise, RD= R*D, BID= Board independence, BS= Board size, BM= Board meetings, CEODUO= Dummy equals 1 if CEO and chairman are combined; 0 otherwise, TURN= Dummy equals 1 if top management is changed, SBID= Supervisory board independence, SBS= Supervisory board size, SBM= Supervisory board meetings, SBQ= Supervisory board qualification, MTB= Market to book value, TA= Total assets, ROA= Return on assets, LEV= Leverage.